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The abridged version of
"The Book of Simple Drugs"
of
Ahmad ibn Muhammad al-Ghāfiqī (d. c. 560/1165)
by
Gregorius Abu l-Faraj (Barhebraeus) (d. 684/1286)

Edited with an English translation
by
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THE ABRIDGED VERSION OF "THE BOOK
OF SIMPLE DRUGS"

OF
AHMAD IBN MUHAMMAD AL-GHĀFIQĪ.

BY
GREGORIUS ABU'L-FARAG (BARHEBRAEUS).

*Edited from the only two known Manuscripts
with an English Translation,
Commentary and Indices*

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INTRODUCTION.

Pharmacology is one of the glories of Arabic Science, that is of the science of Arabic-writing scholars of the Islamic World during the Middle Ages. The source of Arabic pharmacology is to be found in Greek pharmacology, especially the *Materia Medica* of Dioscurides and the book on Simple Drugs by Galenos. In the centuries following his death the closer connection of the Byzantine Empire with the Orient favoured the importation of many Persian and Indian drugs which had been unknown to the Greeks. Byzantine and Syrian Christian physician incorporated those into the fundamental stock of their remedies. But it was only after the rise of Islam that the "Materia Medica" of the Occident and Orient were collected in a systematic way, and that Botany and Mineralogy were enriched by new knowledge.

We give in the following pages a chronological list of the authors of important treatises on simple drugs from Greek times down to the XVIIth. century A.D., particularly those who are mentioned in the text of al-Ghâfiqî's book.

I. List of Authors of Botanical and Pharmacological Treatises.

A. Greek Period.

1. **Theophrastus of Eresos** (Island of Lesbos), born in 370 B.C., died about 285 B.C. A pupil of Plato and a fellow-pupil of Aristotle. Wrote a famous "Enquiry into Plants," now accessible in a good Greek edition with English translation (see Bibliography). His book was never translated into Arabic.

2. **Pedanius Dioscurides of Anazarba** (Asia Minor). Visited, as military surgeon to the Roman Army, many lands and composed, about 78 A. D., his celebrated "Materia Medica" in five books. We quote it after the newest and best edition, that of Wellmann (see Bibliography), adding to al-Ghâfiqî's quotation of the Book (after the name of Dioscurides) the number of each chapter in brackets. This book must have been early translated into Syriac. A bad Arabic translation was made in the first half of the IXth. century A. D. by the Christian translator Stephen son of Basil اصطغان بن باسيل Very soon after, his translation was repeated and improved upon by Hunain ibn Is-hâq حنين بن اسحق (809-

877 A. D. in Baghdad). He composed at the same time a Syriac version of the book. In 948, the Emperor Romanos of Byzantium sent a fine illustrated Greek copy of the work as a present to the Ruler of Cordova, the great Abd-ar-Rahman III عبد الرحمن, and three years later the same Emperor sent the monk Nicholas to read and explain the book to the scholars at the Moorish court; he verified the names of the plants given in the Arabic translation and created a better edition, under the supervision of the Jewish physician and minister Hasdaï ben Shaprût. Several of the Hispano-Moorish physicians mentioned hereafter wrote commentaries on the Arabic version of the "Materia Medica" of Dioscurides. A few fine copies of Hunain's Arabic version of the book exist in European libraries : one, with numerous glosses, in Paris at the National Library, another, with fine illustrations including a miniature painting of a drug store, in Constantinople. (No. 3704 Aya Sofia Library). ¹ No printed edition of Dioscurides' Arabic "Drug-Book" is in existence.

Omitting the Roman Latin pharmacologies which remained unknown to the Arabs, we pass on immediately to.

3. **Galenos of Pergamos** (Asia Minor; lived from about 129-200 A. D.). Well-known to Syrian and Arab scholars. His enormous literary output was translated into Syriac as far back as the VIth., and into Arabic mainly during the IXth. century A. D. Galen's book on Simple Drugs

1. For other MSS. in Bologna, Leyden, Oxford etc. see H. Diels Handschriften der antiken Aerzte II, p. 31 (Berlin 1906).

(*De Simplicium Medicamentorum Temperamentis et Facultatibus*) is published in the Greek text in Kuehn's great edition of Galen's Works (vol. XI, p. 379-vol. XII, p. 377, Leipzig 1826). We quote in our translation the volume and page of this edition in brackets after the name of Galen. The "Simple Drugs" of Galen was translated into Syriac by Yûsuf al-Khûrî and by Ayyûb, two minor Christian translators of the IXth. century A. D. Hunain translated it again about 840 A. D. into Syriac, and later on into Arabic for his protector 'Ali b. Yahyâ علي بن يحيى, Secretary of the Caliph al-Mutawakkil.¹ This translation exists in manuscript only² in the libraries of Constantinople, the Escorial, Florence, Paris, London, etc. It has never been published in print.

4. **Oribasius** was the physician in ordinary to the Roman Emperor Julianus Apostata (361-3 A. D.). He wrote in Greek a medical encyclopedia in 70 books and (about 390 A. D.) an extract (synopsis for his son Eustathius) of this too bulky work.³ This book contains also section on simple

1. According to a recent publication of Hunain's own "Treatise on the Translations of Galen." See Bergstraesser, Hunain ibn Is-hâq ueber die syrischen und arabischen Galen-Uebersetzungen (Leipzig 1925), and Max Meyerhof, New Light on Hunain ibn Ishâq and his Period (Isis vol. VIII 1926, pp. 685-724).

2. Diels I. c. I. p. 96.

3. All that remains of his literary output was published by Bussemaker and Darenberg (Oeuvres d'Oribase, 6 vols. Paris 1856-1876). A recent edition of the text of the *Collectanea* (by Joh. Raeder) is now appearing in Berlin and Leipzig 1928-9.

drugs which is sometimes quoted by Arabic authors. The works of Oribasius were translated into Syriac and Arabic by Hunain ibn Ishâq and his pupil 'Isâ ibn Yahyâ عيسى بن يحيى; but nothing remains of these translations; they are all lost. Many fragments of Rufus of Ephesus (IInd. cent. A. D.) are preserved in his books.

5. **Paul of Aegina** (Paulus Aegineta) was a Greek physician in Alexandria shortly before the conquest of Egypt by the Arabs, 640-2 A. D.). He left a compendium of medicine in seven books, compiled from the works of Galen and others. The last of the seven books comprised simple drugs and was frequently quoted by Arabic writers on the knowledge of drugs.¹ This work, too, was translated into Syriac and Arabic by the indefatigable Hunain, but only a fragment of the part on Poisons is left in Arabic MSS. which are extant in several libraries.²

6. **Ahrun al-Qiss** اهرن القيس (i. e. "Aaron the Priest") is the last Alexandrian physician of the Pre-islamic period. He must have been a contemporary of Paul of Aegina. He wrote a great "Medical Pandect" (*kunnâsh*³ *fi't-tibb* كتاب في الطب) in 30 books. It is possible that he wrote it originally in Greek.

1. There exists no modern edition of Paul's original text but an excellent translation with commentary by Francis Adams (The Seven Books of Paulus Aegineta, 3 vols. London 1845-7). See Bibliography.

2. Diels I. c. 11. p. 78.

3. This word is derived from Syriac *kenâshâ* כנשה i. e. Collection.

Anyhow, it was translated from Syriac into Arabic by Mâsargawaih (see the following no. 8) and formed one of the fundamental sources of Arabian Medicine.

B. Islamic Period

We mention here a series of physicians who wrote on remedies and who were mostly quoted by al-Ghâfiqî. The less important names occurring in his text are explained in the notes.

7. **Thiyâdûq** ثيادوق (probably a misspelling for Thâûdût i. e. Theodotus) was one of the first Christian physicians under Islamic rule. He was, according to Arabic historians, the physician of Haggâg b. Yûsuf حجاج بن يوسف the capable but cruel general of the Umayyad Calif 'Abd al-Malik. Thiyâdûq died 708 A. D. and left several books, a medical *Kunnâsh* and a book on remedies and their substitutes (both of them lost). It was probably from the last-mentioned work that al-Ghâfiqî extracted his occasional quotations.

8. **Mâsargawaih or Mâsargîs** ماسرجويه أو ماسرجيس, a Persian Jew; seemed to have lived in Basra ('Irâq) during the first half of the VIIIth cent. A. D., viz. under the Umayyad Caliphs. His works, now lost, were frequently quoted by later Arabic physicians; besides the translation of Ahron's "Pandect", he left a book on aliments and simple drugs. It is this latter book which is quoted by al-Ghâfiqî. Rhazes and Ibn al Baitâr call Mâsargawaih "The Jew" اليهودي.

9. **'Isâ b. Hakam** عيسى بن حكم of Damascus; lived in the second half of the VIIIth. cent. A. D. He is quoted by al-

Ghâfiqî under the name of *Masîh* مسيح (i.e. "Christ"), and the Mediaeval Latin translators sometimes call him "Christianellus". The main work which he left was a *Kunnâsh* on medicine containing a section on drugs. It is lost.

10. **Bakhtîshû' b. Gûrgîs** بختيشوع بن جورجيس was one of the first members of a celebrated family of Christian physicians who were in favour under the Abbassid Caliphs during three centuries. He lived at the end of the VIIIth cent A. D. and was one of the court-physicians to Hârûn ar-Rashîd. His *Kunnâsh* is quoted by Rhazes, al-Ghâfiqî and others.

We come now to the IXth cent. A. D. during which flourished physicians of great repute.

11. **Yûhannâ b. Mâsawaih** يوحنا بن ماسويه (d. 857 A. D.; called in Latin translations *Joannes filius Mesue* or *Janus Damascenus*. A Christian physician, lived at the Persian Academy of Gondê-Shâpûr and in Baghdad as head of the Translation School (*Bait al-Hikma* بيت الحكمة) in the first half of the IXth cent. A. D. He left several capable pupils among whom was Hunain ibn Is-hâq, and wrote many books, some of which are still extant in libraries. Among them were works on Aliments and on Poisons quoted by later authors.

12. **'Alî b. Rabban at-Tabarî** علي بن ربن الطبري, a Christian Persian converted to Islam; flourished under the Califate of al Mutawakkil to whom he dedicated, in 850 A. D., his most important work, a medical compendium called *Firdaws al-*

Hikma الحكمة¹. The quotations from his book by Rhazes and al-Ghâfiqî go under the names of 'Alî b. Zayn علي بن زين or at-Tabarî الطبري.

13. **Hunain b. Is-hâq** حنين بن اسحق (809 - 877 A.D.). Was a Christian contemporary of the above mentioned; a prominent physician and at the same time the most celebrated translator of Greek medical works into Syriac and Arabic². He certainly produced more than 150 translations and wrote more than 100 original books; the bulk of this enormous output is now lost. Arabic Pharmacology is indebted to Hunain for the translations of Dioscurides' "Materia Medica" and Galen's "Simple Drugs", as we stated above. He created many of the Arabic scientific terms and identified the Greek drug-names with the Arabic, Persian and Syriac ones of his time. These names passed immediately into the medical works of his contemporaries³. Moreover, Hunain made extracts from and commentaries on the pharmacological treatises which he had translated. Ibn Abî Usaibi'a ابن أبي أسبيعة the

1. The Arabic text of this book has recently been edited by M. Z. Siddiqî (Firdawsu'l-Hikmat or "Paradise of Wisdom," of Alî b. Rabban at-Tabarî. Berlin 1928) See the analysis of the work by M. Meyerhof in *Isis* vol. XV (1931) pp. 6-54.

2. See his biography given by M. Meyerhof in the Introduction to "The Ten Treatises on the Eye ascribed to Hunain b. Is-hâq", Cairo 1928.

3. See, e. g. the afore-mentioned *Firdaws al-Hikma* and "The Book of al-Dakhira" (edited by G. Sobhy, Cairo 1928) ascribed to the great mathematician and physician Thâbit b. Qurra ثابت بن قرة (825 - 900 A.D.).

historian of Arabian physicians¹, enumerates seven such tracts. None of them has reached us, but Hunain's name is frequently to be found in al-Ghâfiqî's pharmacology.

The following authors were all Christians :

14. **Hubaish b. al-Hasan** حبيب بن الحسن, Hunain's nephew and most prominent pupil, translated many medical works mostly of Galen, from his master's Syriac version into Arabic. He also left several books of his own, among them a work on simple drugs. This latter is now lost, but known by the quotations in Rhazes' and al-Ghâfiqî's writings.

15. **Is-hâq b. Hunain** اسحق بن حنين, Hunain's talented son and second-best pupil. Left, besides many translations of medical and philosophical works by Galen, Aristotle and Plato, several original books; and among others a treatise on simple drugs, equally lost.

16. **'Isâ b. 'Alî** عيسى بن علي, another pupil of Hunain; seems to have left a pharmacological treatise, which is only known by quotations.

17. **'Isâ b. Mâsa** عيسى بن ماسة about whom Ibn Abî Usaibi'a (vol. 1 p. 184) gives but a very short account. He wrote a book on the virtues of aliments, which is lost.

18. **Yûhannâ b. Sarâbiyûn** يوحنا بن سريانيون (*Joannes filius Serapionis*) of Damascus (?) was a Christian practitioner of the IXth. cent A. D. He composed a *Kunnâsh* on medicine which was well-known and often quoted on account of

1. عيون الانباء في طبقات الاطباء : مصر ١٨٨٢ الجزء الاول ص ١٩٨ — ٢٠٠.

its pharmacological information. It was early translated into Latin and printed for the first time in Venice 1479; eight more printed editions are known. But the Arabic original was lost a long time before, and the only copy seems to be one in the Aya Sofia Library at Constantinople (Istanbul).

19. **Is-hâq b. 'Imrân** اسحق بن عمران was a Muslim physician of Baghdad who emigrated to North Africa and entered the service of Ziyâdat-allâh b. al-Aghlab زيادة الله بن الاغلب, ruler of Qairawân (now Tunisia) who reigned 816-837 A. D. Later on Is-hâq lost the favour of the prince and was cruelly put to death. He left about a dozen books, among them one on simple drugs repeatedly quoted by al-Ghâfiqî.

20. **Is-hâq b. Sulaimân al-Isrâ'îlî** اسحاق بن سليمان الاسرائيلي a celebrated Jewish physician in Qairawân, and pupil of the last mentioned. Was the author of several medical and philosophical books, some of which were translated into Latin and were famous in Europe down to the XVIIth cent. Is-hâq's book "On Simple Remedies and Aliments" is quoted by al-Ghâfiqî under the name of *al-Isrâ'îlî*.

21. **Qustâ b. Lûqâ** قسطا بن لونا of Ba'lbakk بعلبك (in Syria) was a Christian physician of the end of the IXth cent. and a prominent translator of Greek medical and philosophical works. Among his own works, a book on aliments is to be cited, some quotations of which were made by later authors.

Before we leave the IXth cent. A. D., we have to cite four authors of works which are not strictly pharmacological.

22. **Abû Yûsuf Ya'qûb b. Is-hâq al-Kindî** أبو يوسف يعقوب بن اسحق الكندي (d. after 870 A. D. in Baghdad), called "the Philosopher of the Arabs", was the first great Muslim scholar of universal erudition. He wrote on philosophical, theological, medical, musical, mathematical, astronomical and physical questions. He was quoted by al-Ghâfiqî on account of his writings on stones, metals and plants. It is not known whether his "Summary of Galen's Simple Drugs" survived him long.

23. **Al-Filâha ar-Rûmiyya** كتاب الفلاحة الرومية i. e. "The Greek Agriculture", is frequently quoted in al-Ghâfiqî's text. This is nothing else than an Arabic translation of one of the Hellenistic compilations on Agriculture and Husbandry. Several of them were translated at the end of the VIIIth cent. The work which is mentioned above seems to be that which was ascribed to a certain Qustûs قسطوس who was frequently mistaken for the translator Qustâ b. Lûqâ. Finally it was proved by Ruska¹ that this is a book by Cassianus Bassus, the Greek original of which is extant².

24. **Abû Bakr Ahmad ibn Wahshiyya** أبو بكر احمد بن وحشية (about 820 A. D.) was the ill-famed author of several writings which he alleged to be translations from very old Babylonian sources. Among them is "The Nabataean Agri-

1. J. Ruska, "Cassianus Bassus Scholastikus und die arabischen Versionen der griechischen Landwirtschaft". In *Der Islam* V (1924) pp. 174—198.

2. Cassiani Bassi Scholastici Geoponica, ed. H. Becker Leipzig 1895.

culture" (*Al-Filâha an-Nabatiyya*) الفلاحة النبطية, sometimes quoted by al-Ghâfiqî. Apart from fantastical etymological explanations, it contains many useful remarks on animals and plants.

25. **Abû Hanîfa al-Dînawarî** أبو حنيفة الدينوري (d. 895 A. D.), an Arabic philologist and scientist of Persian extraction. Was the author of a famous "Book on Plants" (*Kitâb an-Nabât* كتاب النبات). This book, unhappily lost but known by numerous quotations and by al-Ghâfiqî, became the main authority on plant-names for all the Arabic lexicographers. It was criticised by another philologist, 'Alî b. Hamza علي بن حمزة who is equally quoted in al-Ghâfiqî's text under the name of al-Basri البصري.

We now come to the Xth cent. A. D. in which the predominance of Christian physicians and translators ended in favour of Muslim scholars. The most prominent of them was;

26. **Abû Bakr Muhammad b. Zakariyyâ ar-Râzî** أبو بكر محمد بن زكريا الرازي known in Europe mostly under the latinized name of *Rhazes*. He was a Persian Muslim, lived in Rayy (Persia) from 865-925¹ and produced a most incredible number of works on Medicine, Natural Science, Logic, Metaphysics, Mathematics, Alchemy, Theology and Ethics. Ibn

1. Although al-Bîrûnî gave an exact biography and chronology of ar-Râzî in the famous Leyden MS. Or. 133 (translated by J. Ruska, "Al-Bîrûnî als Quelle für das Leben und die Schriften al-Râzî's, in *Isis* V, 1922, p.p. 27-50), scholars always follow the dates given by later and less trustworthy Arabic authors. Thus, e. g., the millennium of Rhazes' death was unjustly commemorated in Paris. in 1930.

Abî Usaibi'a (I pp. 315-21) enumerates about 250 books of his writings. Among them are works as bulky as his great "Continens" (*al-Hâwi fi't-Tibb* كتاب الحاوي في الطب) in 20 volumes on Therapeutics. Most of them are lost. This "Continens", as well as his great Pharmacology (*Aqrâbâdhîn* اقرباذين)¹, his "Drug-book" and "Book on Substitutes for Drugs" were quoted by al-Ghâfiqî. It is probable that he sometimes copied from the many literary extracts given by ar-Râzî who was acquainted with the entire Arabic medical literature created until the end of the IXth cent. A. D. Most of the above-mentioned works are lost.

27. **'Alî b. al-'Abbâs al-Magûsî** علي بن العباس المجوسى. Was also a Persian Muhammadan physician (d. 994 A. D.). He wrote a fine encyclopedia on the whole domain of medicine *Kâmil as-Sinâ'a* كامل الصناعة (i. e. "A Complete Treatise on the Art") called later by medical men *al-Malakî* الملكي (i. e. "The Royal Book"). It is indeed an excellent, perhaps the best work on Medicine in Arabic. Happily it survived and has been published in print (in Cairo-Bûlâq 1294 A. H.); Al-Ghâfiqî sometimes quotes this work. Constantine the African translated the book into Latin, about 1070 A. D., under the name of *Pantegni*, ascribing it audaciously to himself. A later and better translation was completed by Stephen of Antioch in 1127, under the title "Liber Regius" (printed in Venice and Lyons 1523).

1. Derived from Greek *γραφίδιον* (*graphidion*) i. e. a small register.

28. **Abû Mansûr Muwaffaq b. 'Alî** أبو منصور موفق بن علي (North Persia). About 970 A. D.; wrote, for the Samanid Sultan Mansûr I, a pharmacological treatise in Persian; it is one of the first monuments of modern Persian in prose. It was never translated into Arabic and had no influence on Arabic medicine; but it was very useful to us for the identification of Persian drug-names. Unhappily the original text¹ was not at our disposal, but only Achundow's translation.

29. **Nastâs (i.e. Anastasius) ibn Guraig** نسطاس بن جريج was a Christian physician in Egypt, living in the first half of the Xth. cent. A.D. He is little known; the quotations under his name, *Abû Guraig the Monk* or *Ibn Guraig*, are probably from his main work, a now lost *Kunnâsh* on Medicine.

30. **Muhammad' b. Ahmad at-Tamîmî** محمد بن احمد التميمي of Jerusalem, was a physician in the service of Ya'qûb b. Killis يعقوب بن كليس, the powerful vizier of the first Fatimid Califs in Egypt (second half of the Xth cent. A. D.). Al-Ghâfiqî's quotations refer to at-Tamîmî's drug-book *al-Murshid* المرشد (i. e. "Guide to the Right Way"). Of this valuable book there only exist a few fragments which were analyzed by L. Leclerc.

1. "Liber fundamentarum pharmacologiae", auctore Abû Mansûr Mowaffak ben 'Alî Harawî. Ed. Romeo Seligmann, 2 vols, Vienna 1830-33. For the translation see Bibliography (Abû Mansûr).

2. Histoire de la médecine Arabe, (Paris 1876) pp. 389-91;

31. **Al-Bâlisî** البالىسى was an almost unknown physician who lived in Egypt. He wrote a book *at-Takmil fi'l-Adwiya al-Mufrada* كتاب التكميل في الادوية المفردة ("The Perfection on Simple Remedies") for Kâfûr كافور the Vizier of the Ikhshîd Dynasty in Egypt (about 940 A. D.)¹. It was sometimes quoted by al-Ghâfiqî concerning Indian drugs.

32. **Abû Bakr Ahmad b. Ibrâhîm** أبو بكر احمد بن ابراهيم commonly called *Ibn al-Gazzâr* ابن الجزار (d. about 1000 A. D.) A Tunisian Muslim, was the most prominent pupil of Is-hâq al-Isrâ'îlî (see supra no. 20). He wrote about 25 books on Medicine, one of which, treating of simple remedies, *K. al-I'timâd* كتاب الاعتماد, which was lost, and one on Substitutes. Both were sometimes quoted by al-Ghâfiqî.

33. **Abû Dâwûd Sulaimân b. Hassân** أبو داود سليمان بن حسن better known under the name of *Ibn Gulgul* ابن جلجل. Was a distinguished Hispano - Moorish physician at the court of the Caliph Hishâm II. in Cordoba. There he wrote, in 982 A. D., an "Explanation of the Names of Remedies in the Book of Dioscurides" تفسير أسماء الادوية المفردة من كتاب ذيوسقوريدس and a "Discourse on those Remedies Used in Medicine which were Omitted by Dioscurides in his Book"². These books are now lost, but were frequently quoted by al-Ghâfiqî. Moreover, he wrote a short "History of Physicians and Philosophers" from which Ibn Abî Usaibi'a copied many passages.

1. Ibn Abî Usaibi'a II p. 86.

2. See Ibn Abî Usaibi'a II p. 48, line 10 foll

34. **Abû Bakr Hâmîd ibn Samgûn** أبو بكر حامد بن سمجون (d. 1001 A.D.).¹ A Muslim and Hispano-Moorish physician in the service of a Hâgib حاجب (vizier) at Cordoba. His treatise on simple drugs is lost, but was quoted by al-Ghâfiqî.

34. **Abu'l-Qâsim Khalaf b. al-'Abbâs az-Zahrâwî** أبو القاسم خلف بن العباس الزهراوي lived, like the two last-mentioned physicians, at Cordoba in the second half of the Xth cent. A.D. He is famous for his book *at-Tasrif* التصریف on Medicine, in 30 sections. It was early translated into Latin under the title "Liber Theoricae nec non Practicae Alzaharavii"; the surgical section (section XXX) is particularly famous as "Chirurgia Abulcasis" and was translated into Hebrew, Latin and French. The XXVIIth. section of the *Tasrif* contains an alphabetical list of simple drugs, the XXVIIIth (known in Latin as "Liber Servitoris") their preparation, and the XXIXth their synonyms and substitutes.² It was these three chapters which were quoted by al-Ghâfiqî and others. There exists no known complete MS. of the Arabic text of the *Tasrif*; but we may hope that in the future a copy may be brought to light from the treasures in the libraries of Constantinople.

30. **Abû 'Alî al-Husain b. 'Abdallâh** known as **Ibn Sîna** ابن سینا (in Latin *Avicenna*) was a Persian Muslim and lived from 980 - 1036 A.D. He is considered as "the

Prince of all Learning" (*Ash-Shaikh ar-Ra'is* الشيخ الرئيس) and is, with Rhazes, the greatest physician and, with Averroes, the greatest philosopher of the Islamic world. We only mention here, among his enormous scientific output, the "Canon of Medicine" (*al-Qânûn fi't-Tibb* كتاب القانون في الطب) because it contains a section on simple drugs which is frequently quoted by al-Ghâfiqî. It forms in the Cairo printed edition of 1294 A. H. the second half of the first volume (vol. I, pp. 243-470). A fairly good Latin translation is to be found in the last of all the many printed Latin editions of the Canon¹. We have used both these editions. The descriptions of the drugs are very short; Avicenna mainly laid stress on the enumeration of their healing properties.

37. **Abu'r-Raihân Muhammad Ibn Ahmad al-Bîrûnî** أبو الريحان محمد بن احمد البيروني (973-1048) a Muslim from Transoxania, contemporary with Avicenna, lived at the court of the Sultans of Ghazna (now Afghanistan). He was the most original and perhaps the greatest of all the Islamic scientists. He specialized in Mathematics, Chronology, Physics and Indian History; but was also a remarkable theologian and linguist. His *Materia Medica Kitâb as-Saidana* كتاب الصيدنة (Book of Drugs) was only known in a Persian version², until recently when Dr. Zeki Welidi, professor at the Uni-

1. Ibid. II p. 51-52.

2. A short analysis is given by L. Leclerc in his "Histoire de la médecine arabe", vol. I, pp. 447-87 and 451-3.

1. "Abuali ibn Tsina (Avicenna) Canon Medicinæ" interprete et scholiaste V. F. Plempio. Louvain 1658, vol. II. pp. 1-311.

2. See H. Beveridge in *Journal of the Royal Asiatic Society* 1902 pp. 333-5.

versity of Istanbul (Constantinople) discovered an old and defective Arabic copy of this invaluable book in the Government Library at Brussa (Asia Minor). At the request of Dr. Helmut Ritter, both the discoverer and the Turkish Minister of Education gave us permission to have the MS. copied, although Z. W. himself intended publishing a part of it. We wish to offer here our hearty thanks for this generosity. This MS. allowed us to identify several Persian and Indian drugs; for al-Bîrûnî never omitted to give the synonyms of drugs in many languages, e. g. Syriac, Persian, Greek, Baluchi, Afghan, Sindi and Indian dialects. That is perhaps the reason why the text of his book early became corrupted and why it remained unknown to nearly all the writers on Pharmacology in the more Western parts of the Islamic world. It is doubtless one of the most original books on the subject, and was most useful for our commentary.

38. **Abû 'Alî Yahyâ b. 'Isâ ibn Gazla** أبو علي يحيى بن عيسى (d. 1100 A.D.). Was a Christians physician converted to Islam. He composed a book on Medicine arranged in tables and a Pharmacology *Minhâg al-Bayân* منهاج البيان (see Bibliography). Both works were very well known in the Islamic world and numerous copies exist in public and private libraries. The *Minhâg* is sometimes quoted by al-Ghâfiqî. We used it occasionally for our commentary.

39. **Abu'l Hasan 'Alî ibn Ridwân** أبو الحسن علي بن رضوان

(about 980-1060 A.D.) was a distinguished Muslim medical practitioner in Cairo, a keen student of Greek medicine and philosophy, and known by numerous writings as well as by his long scientific controversy with Ibn Butlân ابن بطالان of Baghdad. He left an alphabetical treatise "On Simple Drugs" which is lost to us, but quoted by al-Ghâfiqî and others.

40. **Abû'l-Mutarriif 'Abd ar-Rahmân... ibn Wâfid** al-Lakhmî أبو المطارف عبد . . . بن وافد الأحمي (known in the Occident as *Abenguefith* was a Spanish Muslim who lived in Toledo about 998-1074 A.D. as a statesman and physician. He wrote, besides other medical books, a "Materia Medica" of which a Latin translation exists in MSS. under the title "De Medicamentis simplicibus"¹. This book was frequently quoted by later authors and sometimes severely criticised by al-Ghâfiqî.

41. **Abû 'Ubaidallâh b. 'Abd al-Azîz al-Bakrî** أبو عبيد الله بن عبد العزيز البكري (d. 1004), a famous Hispano-Arab geographer and philologist. Lived mostly in Cordoba. He described many plants in his great geographical work *K. al-Masâlik wa'l-Mamâlik* كتاب المسالك والممالك (Book of the Routes and Kingdoms). The quotations by al-Ghâfiqî, however, seem to have been extracted from his work "On Plants and Trees of Andalusia"² which has not survived.

1. On fragments of the Arabic text see C. Brockelman, *Arabische Literaturgeschichte* (Weimar 1898) vol. II p. 485.

2. Ibn Abî Usaibi'a II. p. 52 line 9.

Here ends the list of the XIth cent. A.D. The following century was that of our author al-Ghâfiqî and his contemporaries. Naturally they are not mentioned by him, but they are nearly all quoted by Ibn al-Baitâr.

42. **Mechithar** of Her (Armenia) wrote, in 1187, a medical treatise "Consolation in Fevers"¹ compiled from Arabic, Persian and Armenian sources. It was unknown to the Arabs, but was useful in our investigations on the names of plants and remedies.

43. **Mûsâ b. 'Abdallâh b. Maimûn** موسى بن عبد الله بن ميمون known as *Maimonides* (1135-1204 A. D.) was the celebrated Jewish philosopher, theologian and physician who lived from 1166 onwards in Cairo. Among his numerous writings, we mention here only his book "On Poisons and the Protection from Deadly Drugs". The intended edition of the Arabic text was delayed by the sudden death of the editor Dr. Hermann Kroner (d. 1930). An old Latin translation by Blasius of Montpellier exists in MSS. only; a modern French and a German version are both out of print² and are extracts rather than translations.

44. **Abû 'Abdallâh Muhammad... b. Idrîs** أبو عبد الله الشريفة الإدريسي known as *ash-Sharîf al-Idrisî* (1100-1166 A. D.) was a Muslim prince and a famous geographer who lived, during the last years of his life, as a refugee at the court of the Norman kings of Sicily. Besides his great geographical works, he wrote a pharmacology *Kitâb al-Gâmi* كتاب الجامع "The Universal Collection" which was often quoted by Ibn al-Baitâr. The original was lost, but half of it has recently been discovered by Dr. Helmut Ritter in a precious MS. at Constantinople (*Fâtih* no. 3610)¹. The discoverer was kind enough to procure for us a photographic copy which was utilized by us in the preparation of the commentary.

45. **Abû Ga'far Ahmad b. Muhammad al-Ghâfiqî** أبو جعفر أحمد ابن محمد الغافقي (d. about 1160 A. D.). His work forms the subject-matter of the present publication. We devote a special paragraph to him; see below.

46. **Abû Zakariyyâ 'Yahyâ ... ibn al-'Awwâm** ابن العوام, a Spanish Muslim of Sevilla (d. about 1200 A. D.). He wrote a book on agriculture (*K. al-Filâha* كتاب الفلاحة) which was quoted by Ibn al-Baitâr and other. It was edited in Arabic and translated into French:².

1. The Armenian text was printed in Venice in 1832; an excellent German translation with commentary was published by E. Seidel, in 1908 (see Bibliography sub: Mechithar).

2. J. M. Rabbínovicz. *Traité des poisons* etc. Paris 1865. M. Steinschneider, *Gifte und ihre Heilung*, von Moses Maimonides (in Virchow's Archiv vol. 52, pp. 66-120).

1. See M. Meyerhof, in Archiv f. Geschichte der Naturwissenschaften XII (1929 pp. 45-53 und 225-236).

2. J. A. Banqueri, "Libro de Agricultura . . . Ebn el Awam. Madrid 1802. 2 vols, and Clement-Mullet, "Le livre de l'agriculture d'Ibn - el - Awam". Paris 1864 - 6, 3 vols.

47. **Amîn ad-Dawla Hibatallâh ... ibn at-Talmîdh** أمين الدولة هبة الله . ابن التلميذ (1073 - 1164), a Christian practitioner in Baghdad, physician to the hospital and "Head of the Physicians"; wrote several books on drugs and remedies. His two treatises on compound remedies were very famous in the Orient. He also composed extracts from the "Simple Drugs" of Galen, and notes to Ibn Gazla's (see no. 38) *Minhâg* منهاج. But none of these literary productions has survived.

During the XIIIth cent A.D. there was a regular revival of pharmacology by quite a number of medical men some of whom were very original in their conceptions while others were mere compilers. Among the former we have to mention in the first place:

48. **Abu'l-'Abbâs Ahmad** ابو العباس احمد Hispano-Moorish scholar with the surnames of *Ibn ar-Rûmiyya* ابن الرومي and *an-Nabâti* النباتي i. e. "The Botanist". He was born at Sevilla (ab. 1170 A. D.) made, on the occasion of his pilgrimage, a long journey through North Africa, Arabia Syria and Mesopotamia and died in 1239 after his return to his birth-place. He left a description of his journey *ar-Rihla* الرحلة which is unhappily lost, but known by numerous quotations from it by Ibn al-Baitâr, his pupil. In this work he described many plants in the most lucid manner, and spoke rationally about their species and varieties, so that he well deserved his surname. He also wrote on the names of simple drugs of Dioscorides and on the composition of remedies, But all his literary output is lost.

Another most original botanist of the XIIIth cent. was

49. **Rashîd ad-Dîn Mansûr ... ibn as-Sûrî** رشيد الدين منصور بن السورى who lived in Syria about 1177—1243 A. D. He travelled in the Near East accompanied by a painter, and not only described many unknown plants, but had them painted as fresh plants and as dry drugs. Unhappily, his book which must have been besides the old edition of Dioscorides' "Materia Medica" the first illustrated drug-book of the Arabs, is lost; and Ibn al-Baitâr does not even mention it.

50. **Diya' ad-Dîn Abû Muhammad 'Abdallâh ibn Ahmad Ibn al-Baitâr** ضياء الدين ابو محمد عبد الله بن احمد بن البطار born at Malaga (Spain) at the end of the XIIIth cent. A. D. travelled, like his master Abu'l-'Abbâs in North Africa and the near East and died in 1248 A. D. at Damascus. Leclerc¹ calls him 'the greatest botanist of the East'. This is somewhat exaggerated, but he was the greatest and the most intelligent compiler of pharmacological works in the Arabic-writing world. We shall prove in the next chapter and by our edition itself, that he took al-Ghâfiqî's book as a basis for his work and added quotations from later authors with some remarks of his own. Anyhow, the editions of his great *Gâmi'* جامع "Collection" on Remedies is invaluable, and hundreds of scholars have based their studies of Arabic botany and pharmacology on the printed edition of that book and on the

1. Histoire de la médecine arabe, vol. II, p. 225.

learned translation of the same by Lucien Leclerc¹ He also wrote a book on the uses of remedies, *al-Mughni* المنقى and another one on the errors of Ibn Gazla (see no. 38) in his *Minhâg* منهاج.

51. **Al-Malik al-Ashraf 'Umar Yûsuf ... Ibn Rasûl** (d. 1296 A.D.), Sultan of the Land of Yemen in South-Arabia, was a learned prince who composed several scientific works before he mounted on the throne. One of these books has survived; it is an alphabetical list of simple drugs followed by a useful list of synonyms. The noble author called it *K. al Mu'tamad* كتاب المعتمد i. e. "the Trustworthy Book" (on Drugs) and stated that he extracted it from the books of Ibn al-Baitâr and at-Tiflîsî, whom we mention below.

52. **Abu'l-Fadl Hasan b. Ibrâhîm at-Tiflîsî** أبو الفضل حسن بن ابراهيم التيفليسي is of uncertain period, but was probably a contemporary of Ibn al-Baitâr. He wrote a book *Taqwîm al-Adwiya al-Mufrada* تقويم الادوية المفردة. It exists in the Bodleian Library at Oxford. (no. 535). It has not, until now, been published in print.²

53 **Abu'l-Munâ Dâwûd b. Abî Nasr** known as **Kôhen al-'Attâr** أبو المنى داود بن ابي نصر المعروف بكوهين العطار lived in

Cairo in the XIIIth cent. A.D. and composed in 1295 a book on the composition of remedies divided into 25 chapters. This Book *Minhâg ad-Dukkân* منهاج الدكان (i.e. "the Management of the Shop") had a wide-spread reputation and is still used by all the native bazaar druggists of the Near East. It survived in many MSS. and was printed five times since 1287 A. H. (1870 A. D.) in Cairo alone.

54. **Abu'l-Farag Gregorius. called Barhebraeus** أبو الفرج غريغوريوس (d. 1286). We shall speak about him and his work in chapter III of this Introduction.

Of the later centuries four authors only are to be mentioned, because their works survived; two of which works exist to-day in printed editions:

55. **Dâwûd b. 'Umar al-Antâki** داود بن عمر الانطاكي (d. 1599) lived in Cairo and left an alphabetical list of drugs and medical terms known as *Tadkhirat Uli al-Albâb* تذكرة أولى الابواب "Memorandum for Intelligent People". It was published in print for the first time in Cairo in 1254 A.H. (1838 A.D.) and again nine times since. It is, like the *Minhâg ad-Dukkân*, much in favour with the Oriental druggists. We used the book frequently for our commentary.

56. **Madyan b. 'Abd ar-Rahmân al-Qawsûnî** مدين بن عبد الرحمن القوسوني (XVIIth. cent. A. D.) Muslim physician in Cairo, published, in 1628 A.D., a medical dictionary *Qîmus al-Atibbâ* قاموس الاطباء compiled from Ibn al-Baitâr and general Arabic dictionaries. A manuscript copy of this book exists

1. See Bibliography under JB and Lecl.

2. Hâggi Khalifa in his bibliography (Lexicon bibliographicum et encyclopaedicum ... ed G. Fluegel, vol II, Leipzig 1837 p. 392 no. 3489) misspells the name (*Hobaish* instead of *Hasan*).

in the Egyptian Library in Cairo (ملب . ٢ م) and we occasionally consulted it for our commentary.

57. 'Abd ar-Razzâq b. Muhammad al-Gazâiri (عبد الرزاق بن محمد الجزائري) (XVIIIth. cent.) was a Muslim physician of Algiers. He travelled through North Africa and wrote a book on drugs and plants which was edited and translated by L. Leclerc (see 'Abd ar-Razzâq, *Kashf ar-Rumûz* كشف الرموز in our Bibliography). It is not very original, but provided in some very rare cases useful information for our commentary.

58. Qâsim b. Muhammad al Wazîr al Ghassânî (قاسم بن محمد الوزير الغساني) was physician in order to the Moroccan Sultan Ahmad al-Mansûr and composed, in 1586, a book on herbs and drugs which contained 379 articles on simple drugs each of which was methodically described; it contained moreover, a remarkable attempt to classify the plants which is unique in Arabic literature. See H. P. J. Renaud, *Un essai de classification botanique dans l'œuvre d'un médecin Marocain du XVIe siècle* (Mémorial Henri Basset, Paris 1928, pp. 197 — 206).

II, Ahmad al-Ghâfiqî

and

his Book on Simple Drugs.

The author of the book which forms the subject of the present publication is very little known. Ibn Abî Usaibi'a (vol. II p. 52) devotes to him a short paragraph which reads as follows:

"He is Abû Ga'far Ahmad b. Muhammad b. as-Sayyid al-Ghâfiqî أبو جعفر أحمد بن محمد بن السيد الغانقي, an excellent leader and a learned doctor who was counted among the prominent men of Andalusia. He was the most experienced of his contemporaries about the faculties, uses, properties and essential qualities of simple remedies, and in the knowledge of their names. His book on Simple Drugs is not equalled in excellence or in sense; he abridged the writings of Dioscorides and the great Galenos in succinct language yet (preserving nevertheless) their full meanings. After their text, he mentioned all that was new in the sayings of later scholars concerning simple drugs, and what everyone of them had collected and known afterwards; thus his book became a collection of the sayings of those who excelled in (the knowledge of) simple drugs, and an encyclopedia to which one had to refer in case of necessity for verification. Books written by al-Ghâfiqî: Book of Simple Drugs (كتاب الأدوية المفردة)".

This is all that we know about our author. Ibn Abi Usaibi'a places him in the VIth cent. A. H. (XIIth cent. A.D.) and Wüstenfeld¹ makes him die in 1164 A.D. We do not know the sources from which he extracted his information. As to his surname (*nisba* نسيبه) it is probably derived from his birthplace *Ghâfiq* غافق which was, according to Yâqût's Geographical Dictionary², a small fortress (*hisn* حصن) near Cordoba. Professor Miguel Asín Palacios, the eminent Arabist of Madrid was kind enough to inform us that he thought the name of Ghâfiq was still extant in the village of Guijo near Pedroche in the district of Cordoba.

Another scholar of the same place seems to have been a contemporary and perhaps a relative of our author. This was Muhammad b. Qassûm b. Aslam al-Ghâfiqî محمد بن قسوم بن أسلم الغافقي who wrote a great treatise on eye diseases called *al-Murshid fî'l Kuhl* المرشد في الكحل "The Guide to Ophthalmology"³.

Ahmad al-Ghâfiqî's book is lost, but large parts of it are preserved in more than 200 quotations given by Ibn al-Baitâr. Therefore, Leclerc (II 79) was able to recognise the originality and the great value of the former's work. At the moment

when the abridged edition of al-Ghâfiqî's pharmacology came in our hands we stated that Ibn al-Baitâr copied not only the above-mentioned quotations from it, but *that he had copied the whole book*, and that his sole merit was to have added many quotations from later authors (e. g. al-Idrîsî and Abu'l-'Abbâs an-Nabâtî) and, only occasionally, his own experiences or opinions. This was so evident that we were able to make use of Ibn al-Baitâr's text as a third witness in places where our two MSS. of al-Ghâfiqî were doubtful or corrupted. It is now certain *that Ibn al-Baitâr's pharmacology is nothing more than al-Ghâfiqî's book with some enlargements and commentaries*. This would be still more evident if we had the original book of the latter. Consequently, Leclerc's judgment (II, p. 225) on Ibn al-Baitâr that he was "the greatest botanist in the Orient", has to be revised. Indeed he was nothing more than a very diligent and learned compiler. Ibn Abi Usaibi'a wrote moreover, (vol. II, p. 133 line 14) that Ibn al-Baitâr always took with him, on his voyages the "Materia Medica" of Dioscurides and Galen and the drug-book of Ahmed al-Ghâfiqî.

Moritz Steinschneider, the famous bibliographer of the Arabic scientists, had extracted from a Latin translation of al-Ghâfiqî's abridged Pharmacology (existing in three different MSS. in Munich, Bâle and Berne) all the names of simple drugs (see Bibliography sub *Steinschn.*), and identified them as far as he could. We have sometimes referred to this publication

1. Geschichte der arabischen Aerzte, Göttingen 1840 p. 98.

2. Ed. Wüstenfeld, vol. III, p. 769.

3. See Hirschberg, "Geschichte der Augenheilkunde im Mittelalter" (Leipzig 1905) p. 68-9. A photocopy of the unique Escorial MS. is in the possession of Mr. J. Cusi who charged Dr. Meyerhof to translate the important parts of the book for the next International Congress of Ophthalmology (Madrid 1933).

We have no need to insist on the merits of al-Ghâfiqî's book. They are well-known by Leclerc's French translation of Ibn al-Baitâr's text and will become still more evident, we hope, by our English translation and commentary. Unfortunately, as we have already said, the original text is lost, and only an abridged copy is extant; this was made by a prominent scholar, Barhebraeus¹.

1. Wüstenfeld, (p. 98) and Brockelmann "Geschichte der arabischen Literatur" 1898. vol. I, p. 488, relate that in the Bodleian Library at Oxford (no. 632) there is another abridged MS. of the book, ascribed to a certain Ahmed b. 'Alî al-Gumhurî احمد بن علي الجمهرى. We ordered a photographic copy of the first pages of this work and can state that it is an anonymous medical treatise which has nothing whatever to do with al-Ghâfiqî's Pharmacology.

III. Barhebraeus and the Abridged Edition of the Treatise on Pharmacology.

Gregorius, called Abu'l-Farag Ibn al-'Ibrî أبو الفرج بن العبري "Son of the Hebrew", latinized *Barhebraeus*, a Christian, was born in Malâtiya ملاطية (Asia Minor) and lived from 1226 to 1286 A. D. At first he studied Medecine, but later became a priest and reached the second highest dignity in the Jacobite Church, that of *Mafrayân* مفريان¹ or Metropolitan, i.e. Vicar of the Patriarch himself. His district was "the East" viz. the formerly Persian lands between the Mediterranean and the Caspian sea. Continuously travelling, and that during the dangerous period of the great Mongol invasions, he was nevertheless able to produce an incredibly rich literary output. A great many of his productions were compilations. He wrote about History, Theology, Philosophy, Grammar, Chronology and Medecine, and also composed poems and narratives. The best known of his works is the *Chronicon Syriacum*, the first part of which he translated into Arabic²; the second and third parts contain a valuable ecclesiastical history. He translated into Syriac several philosophic and medical works by Ibn Sînâ, and commented on the medical treatises of

1. From Syriac *Maphreyânâ*, מפריאנא. i. e. "the frugiferous" because he was a kind of superior mission-bishop.

2. *Mukhtasar Ta'rikh ad-Duwal* مختصر تاريخ الدول ed. Sâlihânî, Beyrouth 1890.

Hunain b. Is-hâq and others; also on some Greek works of Hippocrates and Galen.

He was undoubtedly particularly interested in pharmacology; for he condensed the *Materia Medica* of Dioscurides and the drug-book of our Ahmed al-Ghâfiqî¹. It was known that a copy of this latter work existed in the Grand-Ducal Library at Gotha (Germany) under the no. Halep 177. Meyerhof was able to see this MS. in 1928, and found that its text was so corrupt that it would have been useless for publication. But in the same year he was informed by the Egyptologist Dr. Keimer, that Ahmed Taimûr Pacha, the greatly lamented Writer, beloved friend of scholars and great collector of Arabic manuscripts², had acquired for his library an old MS. on simple drugs. We very soon saw that this was a fine old copy of the pharmacology of al-Ghâfiqî in its abridged form by Barhebraeus. With his habitual generosity, Taimûr Pacha gave us permission to procure a photocopy of it. It is an excellent MS. copied by the hand of a scribe in 1285 A.D. *one year before the death of Barhebraeus*. It is quite possible that it was transcribed directly from the original MS. of BH himself. The text of this MS. is very good, and the many Greek terms are well transliterated into Arabic.

1. Brockelmann. "Geschichte der arabischen Literatur" (Weimar 1898) vol I, p. 339; Leclerc vol. II, p. 149.

2. He died on the 26th of April, 1930, in Cairo. His sons presented, in 1932, the invaluable Taimûr Library to the Nation

As to the character of the "Selection" (*muntakhab* منتخب) made by Barhebraeus out of the pharmacology of al-Ghâfiqî, we find that it was judiciously done as might be expected from a trained scholar like BH. He left out from the Greek quotations many names which were useless to Arabic physicians, and suppressed several passages concerning Spanish or Latin names of drugs of no interest to Eastern scholars. He also left out the numerous répétitions found in the carefully collected quotations of old authors. However, Barhebraeus, as he stated in his fore-word, did not altogether suppress the parts about the therapeutic action of the drugs, and, according to his own words, the book became more readable and very instructive.

IV. The Manuscripts.

The Cairo MS., 'T' ت (Taimûr Pacha), is a papermanuscript in an excellent state of preservation. It measures 23×15.5 cm, and the written part of the pages measures 19.5×11.6 cm. There are 140 pages of 28 lines each written in compressed *Naskhî*-hand, doubtless that of a scholar. Diacritical points are frequently missing, but the MS. is nevertheless very legible. The date of the copy given at the end of the MS. is "end of Rabî 'Akhar 684 A. H.", i. e. beginning of July 1285 A. D. The name of the copyist is unfortunately missing; he was probably a Muslim as otherwise he would have added a Christian date. Although this MS. was copied during the life-time of the author Barhebraeus, it already shows a certain number of copyists' blunders, and, in several places, serious disorder. In one case the half of a paragraph concerning a plant has been transferred several pages backwards and added to another paragraph with which it has no connection. The printed Bulâq edition of Ibn al-Baitâr and an old MS. of the same in the possession of Dr Meyerhof sometimes helped us to restore the original text. On the contrary, very frequently the MS. 'T' gave a better reading than the edition of Ibn al-Baitâr and helped to improve on the original text of the latter.

The Gotha MS. (G) measures 21.5×15.5 cm, has 358 folios or 715 pages of 15 lines each and is written in a

clear and beautiful *Naskhî*-hand of modern type, probably by a professional copyist. He gives the date and his name at the end of his MS. thus: "Month of Shubât شباط (February) 1694 A.D., written by Gibrâ'il ibn Ya'qûb جبرائيل بن يعقوب known by the name of al-Munîr المنير". Another hand added the Muhammadan date 1138 A.H., corresponding to about 1735 A.D.

This MS. gives a text which is absolutely dependent on the text of 'T'; it repeats all the errors, misspellings and omissions thereof, and must have been copied directly from it or from another copy based upon it. It is, moreover, the work of a very ignorant scribe, the number of errors being enormous. This copy helped us on rare occasions to elucidate the reading of a faintly written word or to correct an error in 'T'.

Both MSS., 'T' and 'G', must have existed for centuries in Egypt. 'G' was written probably by a Syrian Christian, 'T' belonged to a Coptic religious Institution long before it was sold to Taimûr Pasha.

V. Some Remarks on Text,

Translation and Commentary.

We have based our edition of the Arabic text entirely on the good MS. 'T'. The MS. 'G' is so full of errors that their enumeration would have filled half of every page of the printed text. In order to show how great is the difference between 'T' and 'G', we inserted in the textnotes of the authors' foreword all the divergences existing between the two texts. Further on we did not take any notice of the numerous and often stupid errors in 'G' and followed only the text of 'T' of which we gave the pagination. 'G' was only used for comparison, particularly in the spelling of Greek names. Sometimes our text was corrected by a better reading from the edition of Ibn al-Baitâr.

In the translation, we took pains to translate as literally as possible. This resulted in a not very elegant English phraseology. We have to apologize to English-speaking readers for such a result; for in scientific works the beauty of the language has to be sacrificed to the precision of the facts and any attempt to make our English of a higher standard might have affected the exactitude of the translation.

We tried, however to give the commentary in the way adopted by Leclerc and Berendes (see Bibliography), benefiting from the more modern publications which were not at their disposal, and particularly from the studies of

Oriental plants by Schweinfurth, Sickenberger, Ascherson and others. Moreover, we collated copies of unique MSS. of al-Idrisî and al-Birûnî recently discovered (see Bibliography) as well as E. Seidel's learned notes in his edition of *Mechithar*. For the knowledge of names of animals and minerals the new dictionary by Dr. Mohammed Sharaf (Cairo 1929) was very useful to us, and for plants that of Ahmed Issa Bey which was published when we had nearly finished the first part of our edition. It is by far the best record of Arabic plant-names which has ever been written, and will be of invaluable help in our further investigations. The Synonyms in eight ancient and modern languages will, we hope, be welcome to linguists.

An edition like the present one requires an enormous amount of time. The text and translation are not difficult, but to produce a good commentary several hours and even days are sometimes necessary for a single paragraph: the literature is so vast. Our professional duties occupying us both during the day time, we find that we shall need at least two years or more for the present publication, at the end of which we hope to add several carefully prepared indices in different languages. The reader may be reminded that all the great editions of pharmacological works recorded in the Bibliography required several years before their appearance.

We hope that the present edition will not only give a historical text of great importance, and at the same time the first English translation with commentary of an Arabic

pharmacology, but will also help to fix actual botanical and pharmacological terms in Arabic and to revise old ones.

Last, but not least, we wish to thank from the depth of our heart the members of the Committee of Publications of the University with H. E. Aly Pasha Ibrahim at their head for their combined authority in allowing the publication of the book at the expense of the University. We also thank Mrs. Devonshire and Mr. Walt. Taylor, lecturer at the Egyptian University, for many suggestions and corrections and for the interest they took in the work. May they earn the gratitude of scientific scholars all over the world.

VI. List of Abbreviations

and Bibliography

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| 'ABD AR-RAZZÂQ | Kachefer - Roumoûz (Révélation des énigmes) d'Abd er-Rezzaq ed-Djezaïry . . . trad. par Lucien Leclerc. Paris 1874. |
| ABÛ MANSÛR | Die pharmakologischen Grundsätze des Abu Mansur Muwaffak bin Ali Harawi . . . Übersetzt von Abdul - Chalig Achundow (Histor. Studien aus dem Pharmakolog. Inst. d. Kaiserl. Universität Dorpat) Halle 1893 pp. 137 - 414. |
| ADAMS | The seven Books of Paulus Aegineta Transl. from the Greek etc. by Francis Adams. 3 vols London 1844 - 7. |
| 'AVNI | Dictionnaire des sciences médicales français - turc لغات طبية par Hasan 'Avnî حسن عوني, Constantinople 1290 A. H. |
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1304 A. H.
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3 vols (until May 1932), Wien and
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Paris 1892.
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Leipzig 1879 - 82.
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لمدين بن عبيد الرحمن القوصوني MS. in the
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F. Meyer. 4 vols. Königsberg 1854 - 7.
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1908.
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Aegypten, von Dr. Aly Ibrahim Ramis.
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édition) par Ch. Samy-Bey Frascbery.
Constantinople 1901.
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etc. française - persane par Joh.
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Theheran 1874.
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ten, Algerien und Jemen, von G.
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'Ulûm, von Ernst Seidel. Sitzungs-
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[Fol. 1 r.] Selection¹ from (the Book of) al - Ghâfiqî
on Simple Remedies,

Selected by the Unique in (his) Time, the Most Learned
Man of the Period, the Holy Father, the Pious, the Exponent
of Truth and the Revealer of the Minute (mysteries),

Gregorius, Vicar (*Mafrayân*) of the Patriarch of the East,
may God augment his Grace and prolong (the days of) his
Jurisdiction !²

-
1. G : " Beginning " of (the book of) al - Ghâfiqî.
 2. So in T; G reads instead of this: " May God the Very
High have mercy on him and multiply his rewards".

[Fol. 1 v.] **In the Name of God the Merciful
the Compassionate!**

The following is a resumé of the meaning of what Abû Ga'far Ahmad ibn Muhammad ibn Ahmad ibn Khulaid al-Ghâfiqî, may God have mercy on him, said.

The book which I had begun to prepare was originally intended as a memorandum for myself. I did not wish to publish it for two reasons: firstly, because I knew of the public's imperfect knowledge of the difference between the authentic and the non-authentic works; secondly in order not to expose myself to the censure of critics, covetous of those who possess intelligence and perspicacity. When one of my friends, however, encouraged me in its copying, I wrote a preface to express its purpose¹ and the method of its production, and this was also in two parts: first a collation of the sayings of the Ancients with that of the Moderns on this subject, and second a commentary on the unknown names.

Various people had tried to work on these two lines; but I did not find among them anyone who attempted to verify the exactitude of his own work; on the contrary, most of them repeated the mistakes of their predecessors. Thus, some of them made faults in collating the sayings of others, as did Ibn Wâfid when he collated the text of Dioscurides with that of Galen on two different remedies and thought

1. G : my purpose.

they were the same; and others did not say the truth, as was the case with Ibn Sîna when he ascribed to them words which they never said. Generally speaking, there was not one of all those who wrote on these two lines who did not commit great mistakes, from ar-Râzi (Rhazes), who was the first of them, down to our time.¹

With the help of the Almighty I took up the question as carefully as possible, trying to avoid mistakes and without seeking self-glory. I made a complete record of all the remedies that were mentioned by Dioscurides and Galen and added to their sayings those of their successors, as correctly as possible. I drew attention to faulty readings of the names occurring, and I did not include the authority of those who could not verify what they mentioned but had it merely copied. Moreover, I added to it some herbs which are employed by my countrymen at present² and which were not mentioned by any of our predecessors.

The discussion on aliments, perfumes and the divisions of the faculties of remedies, I intentionally omitted, as previous authors had already treated it lengthily enough. My intention was to discuss what was missing and had not been studied by anyone before me, viz. the plants among the remedies, their selection and the distinction between the good

1. This is not correct; at least ten other authors composed books on simple remedies during the IXth. cent. A. D., long before Rhazes who lived from 865-925 A. D. See Introduction.

2. See Introduction p.

and the bad. If our physicians thought that this ought to interest the druggist rather than the physician, their idea would have been right if they did not prepare the medicines themselves. How shameful it was for any of them to ask for simple remedies and to get such as he did not know were the required drugs or not, and to administer them to his patients, blindly following the opinion of botanists and herborists, people who neither read books nor knew about remedies except very little!

Sayeth the slave who is in need of the mercy of God the Very High¹ Gregorius the Vicar:

Therefore I restricted myself in this abridged edition to the enumeration of the remedies, their selection, and only the better known of their names and faculties, omitting whatever may be prepared therefrom of potions, oils, etc.. Thus it came out easily in its vocabulary, and though small in (**fol. 2r.**) size, yet useful in its subject and perfect in its discussion.

Let us now begin with the task we have set for ourselves. The first is the letter *Alif*².

1. G: Who fears his Lord the Almighty.

2. In G only.

LETTER ALIF.

1. **ASÂRÛN** أسارون, **Cabaret** (*Asarum europaeum* L) (Lecl. no. 61).

Diosc. I. (10): It is called wild-nard; its leaves resemble ivy-leaves, but are smaller and more round. Its flowers, situated between the leaves near the root, are purple-coloured and resemble the flowers of the henbane (*Hyoscyamus*). Its seeds are like those of the cartham. It has many roots bearing thin knots and curved like the roots of dog's grass (*agrostis*), but much thinner; they are fragrant, heat and prick the tongue. It grows on richly wooded mountains.¹

Galen VI (ed. Kuehn XI, 840): Its useful part is the root, and its strength is like that of sweet flag (*acorus*), even stronger.

Ibn Samgûn: The best kinds are the Chinese and the Spanish, while the best kind of the Spanish one is that which is brought from Algeciras.

The Author: The original *asarum* is that which comes from Greece. That which is used in Spain is not the

1. Here follow in Dioscurides' original work the names of the lands (Pontus, Phrygia, Illyria etc.) in which the *asarum*-plant grows. As IB I, 23 (Lecl. I, 56) gives these names, it was probably Barhebraeus who omitted them in his abridged edition of al-Ghâfiqî's Pharmacology.

real asarum although it looks like it - especially that from Algeciras - and though it is believed that its faculties are the same. It is a plant which has a slender and round stem, about a cubit high and with knots wide spread, remote one from another. Its leaves are like those of the small centaury, green with a shade of black. At its upper part is a tuft of twigs touching one another, on whose ends are small buds of the size of grains of wheat; their interior contains white downy hairs. From its roots - smaller than the little finger - thin twigs of the length of the tip of a finger, branch off, of fragrant smell and flavour.¹

There is another kind of asarum which is of bitter taste and disagreeable odour. Many people take it for one kind of the long birth-wort (*zarâwand* زرد آوند, *aristolochia*). It is a plant which has smaller and harder leaves than those of the ivy, is blackish or greyish, and has thin shoots by means of which it holds fast to near objects and climbs up trees. It has purple - coloured flowers like those of aristolochia, and produces fruits like those of the caper tree (*capparis*) from which come seeds resembling those of the marshmallow (*althaea*). It has many knotty roots creeping under the earth, of grey or yellow-blackish colour, strong odour and bitter taste, burning the tongue and mouth a little. It is particularly

1. Here follows in al-Ghâfiqî's text as quoted by IB (I, 23) an explanatory note: "This is the *asarum* which comes from Algeciras and which resembles the real asarum more than any other Spanish asarum, although it is different from the description given (scil. by Diosc.)".

this kind which is a useful antidote for poisons and bites of all kinds of snakes, its fruit, seeds and roots being used.

Another kind has leaves smaller than those of aristolochia and small shoots which spread on the ground. Its flower and fruit are like those which we have described above, only somewhat smaller, while its roots are soft, without knots, of yellow colour and spring up from a single root like the black hellebore. It is of bitter taste and fragrant smell, like that of (the real) asarum. It grows mostly in white earth on the mountains. Some believe it to be a kind of swallow-wort *mâmirân* ماميران (celandine, *chelidonium*).

Diosc. I: It is diuretic and an emmanagogue; seven drachms¹ of it with honey-water purge like white hellebore. It is used in aromatic mixtures.

COMMENTARY.

IB quotes this chapter of Diosc. in its entirety (I, 23 - 24; Lecl. I p. 56 - 58), adding short extracts from Ibn Sînâ, ar-Râzî, al-Idrîsî, and some unknown authors. Ibn Samgûn the Hispano-Moorish physician's statement that the best *asarum* comes from China is very interesting, and is confirmed by Idrîsî (MS. Fâtih Mosque no. 3610, p. 23, line 7): وأفضله ما جلب من بلاد الصين. There exist, indeed, two great Japanese kinds, *Asarum Sieboldii* Miq. and *A. albivenium* Rieg., while there are still others in the Far East.

1. In Arabic *mithqâl* مثقال; the Greek text (Diosc. I. Well. I, 15) reads: "7 ounces". A *mithqâl* has about 4.7 grams.

Ibn Sînâ (ed. Bulâq I, p. 248) attributes to *asarum* a diversity of medical actions in dropsy, sciatica, lumbago, scars of the cornea, diseases of the liver, jaundice etc. It is the aristolochiacea *Asarum europaeum* L. The *Rhizoma asari* is still official in several pharmacopoeas. Its active principle is asarin, an emetic; it also contains an essential oil.

Asarum was a much esteemed emetic before the introduction of Ipeca. According to *Achundow* (Abû Mansûr p. 340), in Persia it is always adulterated with a kind of Valeriana which has no emetic action.

Synonyms: Gr.: *ἄσαρον* (*asaron*); Arabic: *âsârûn* اسارون, *nârdîn barrî* ناردین بری (*Dâwûd*), *aqlîfî* اقلطی (*Dâwûd*), *nukhail* (or *nakhîl*) النخيل (*Dâwûd*); Turk.: *tshobân* چوبان دودوک (i. e. shepherd's flute) (*Avni*); Pers.: *esârûn* اشارون شامی; Enge.: asarabacca, cabaret; Fr.: asaret cabaret; Germ.: Haselwurz. See Loew I, p. 223.

2. IDHKHIR إذخر, **Aromatic Rush** (*Andropogon Schoenanthus* L.) (Lecl. no. 29).

Abû Hanîfa: It has a root buried in the ground, thin twigs and a pungent odour. It is like the rush (*asl* اسل)¹, the squinanch rush (*asl al-kawlân* اسل الكولان, *Juncus arabicus* Post), but wider and of smaller internodal spaces; and has a fruit like the blossoms (brushes?) of the reed except that they are thinner and smaller. It is said that when you fix an

1. Here in both MSS. erroneously *athl* أثل, i. e. tamarisk.

isolated plant with your eye and look well at it, you will find that there are others and that sometimes the whole ground is covered with them. It grows in sandy places and river-beds, and when it dries it becomes white.

Ibn 'Imrân¹: That which grows in the Higâz (Western Arabia) is called *haramî* حرمى, and is of superior quality, and that which grows in Qafsa² and on the coast of Africa is inferior.

Diosc. I (17): *Σχοῖνος* (*schoinos*) or aromatic rush. That which comes from Nabataea is the best, and after it comes the so-called Babylonian which some people call (**Fol.** 2 v.) *τευχίτις* (*teuchitis*). The variety from Libya is inferior, and the best of all is the fresh one with many red flowers, of a roseal fragrance and the colour of which, when split up, is purple.

Galen VIII (XI, 136): Its flower is a little heating, a little astringent and diuretic. When applied in compresses it is an emmenagogue and useful for the swellings (tumours) of the liver and the stomach. Its root is more astringent and its flower more heating.

COMMENTARY.

IB quotes the same authors and others. He criticizes ar-Râzî and Ibn Sînâ. *Idhkhîr* is the graminea *Andropogon*

1. It is Is-hâq b. 'Imrân; see Introduction.
2. Qafsa قفصة is an oasis in Southern Tunisia. The name is mutilated in both MSS.


(*Cymbopogon*) *schoenanthus* L. and *A. laniger* Desf. Many oriental names of the plant are mentioned by *Dymock* (III, 562-4) *Herba Schoenanthi* or *Junci odorati* provided by *Andropogon laniger* was not long ago a medicinal drug. The root was known under the name of *Iwarancusa*. In Arabia the powdered plant is known under the name *ghasûl* غسول and is still in use as a perfume for the bath. In Egypt to-day, it is a well-known bazaar drug (*Ducros* no. 1).

Synonyms: Gr : *oxoïros* (*schoinos*); Lat : *juncus odoratus* (*Scribonius Largus*); Ar. : *idhkhîr* اذخر , *khilâl ma'munî* خليل ماؤنى ¹ (*Ibn Gazla*), *tibn Makka* تبن مكة , i. e. Meccan straw (*Idrîsî* p. 19, 1. 18), *hâlfâ' Makka* حلفاء مكة (Meccan grass) *Dâwûd*, for the flowers *fuqqâh al-idhkhîr* فجاج الاذخر (*ibidem* ; Pers. : *gôr-giyâh* گور گیاه , i. e. wild asses' hay, (*Schlimmer* p. 36); Turk. : *esel-i-hoshbû* اسل خوشبو (*Avni* p. 545). For other names see *Issa* p. 16. Engl. : lemon-grass, sweet rush, camel's hay; Fr. : *jonc odorant*, citronelle; Germ. : *Bartgras*, *Kamelheu*.

3. USHNA أشنة . **Fragrant (Tree-) Moss.** Odorant Lichen. *Alectoria usnesides* Ach. (*Lecl.* no. 85).

It is known as "Old Woman's Gray Hair" شيب العجوز (*shaib al-'agûz*) and grows on oaks and other kinds of trees.

Diosc. I : *Bryon* (*Bryon*) or tree-moss. It grows on the

1. I. e. toothpicks of (the caliph) al-Ma'mûn; it may have been popular a name in Baghdad during and after his reign (813-833 A.D.). Ancient Egyptian :  *kun* cited by Kamal, (no proof).

larch-¹, walnut-, oak- and olive-trees. The best is that which grows on larch-trees on mountains; after it comes that which is found on walnut-trees. The best kind is the one which has a fragrant smell and is white; the blackish in colour is inferior.

Galen VI. (XI, 855): It is moderately astringent and possesses resolvent and remollient properties, especially the kind which grows on pine-trees.

COMMENTARY.

The name *ushna* is applied in the Orient to many kinds of odoriferous lichens, mostly of the species of the *Usneae* (which name is derived from the Arabic one). In the Cairo drug-bazaars there still exist many kinds of lichens which are used as ingredients in baking native bread. *J. Müller* (*Revue mycologique*, 27th. Dec. 1881) enumerates the following species, all named in Arabic *shêba* : *Ramalina calycaris* (two varieties); *R. gracca* Müll. Arg. ; *Parmelia sulcata* Tayl. ; *P. physodes* ; *Physcia ciliaris*. *Georg Schweinfurth* (*Über Brotbacken unter Zusatz von Flechten*, *Archiv f. Wirtschaftsforschung im Orient* 1918, 1-2) found, moreover, *Ochrolechia*, *Lecanora esculenta* and *Usnea florida Hoffm.* This latter and *Alectoria* (*Parmelia*) *usneoides* Ach. are the kinds which are called to-day *ushna*. According to *Sickenberger* this Arabic term designates all kinds of moss growing on trees.

1. *Shirbîn* شربین , larch-tree or a kind of cypress, is here and elsewhere the translation of *Dioscurides'* *zédroç* cedar-tree.

Synonyms:¹ Gr : *βρύον* (*bryon*); Lat. : *muscus arboreus*, modern *Lichen odoriferum*; Ar. (Egypt) : *shaiba* (*Dâwâd*); Turk. : *eyî kokân yosûn* أي كوكان يوصون (Honigberger); Pers. : *dewâle*, *dewâleh* دواله (*Abû Mansûr*), (*Schlinner* p.272, *Evernia Prunastri*); Eng. : fragrant moss; Fr. : mousse odoriférante; Germ. : wohl-riechende Bartflechte. Issa (pp. 121 and 186) gives the name *ushna* to *Musculus arboreus*, *sheba* to *Usnea barbata*.

4. ARMÂL أرمال *Cortex Culilawan* (?) (Lecl. no. 46).

Ibn Mâsawaih : It resembles the clove-bark (cinnamon).

Ibn Mâsa al-Basrî : A wood like that of cinnamon, of fragrant smell; it is imported from the Yemen.

At-Tabarî : A plant whose rods are like those of the dill².

Ar-Râzî : I heard that **al-armâl** is a light wrinkled wood from which were made web-beams (or yarn beams). Physicians unanimously agree that it is good for diseases of the mouth.

COMMENTARY.

It is written *armâl* أرمال, *armâk* أرمك (*Ibn Sînâ* and *Abû Mansûr*), *armâlik* أرمالك (*Dâwâd*) or *armali* and *armalîk* (*Idrisî* p. 29, 1. 3) which

1. For many Arabic synonyms for lichens in general, see *Sharaf* p. 440.

2. This can refer only to the size or diameter of the rods. We were not able to find the quoted phrase in at-Tabarî's original work which was recently published (*Firdawsu'l-Hikmat or Paradise of Wisdom of Alî b. Rabban at-Tabarî*, ed. by M. Z. Siddiqî, Berlin 1928).

is probably the same word changed by copyists of MSS. *Ibn Sînâ* (1,260) and *Abû Mansûr* (152) were the first to describe it. According to *Bîrûnî*, *armâk* is the more correct reading. *Sickenb.* (Arzn. p. 7) who found it in the Cairo bazaars declares that it is the *Cortex Culilawan*, the bark of a cinnamon tree from the Moluccas. *Dragendorff* (239—40) designates five other cinnamon varieties as producers of the Culilawan-bark. It was unknown to the Greeks. The Yemen, which is considered by the Arabic authors as the land of origin, was only the place of transit-trade of this drug as well as of many others. 'Issa (p. 176) identifies it with the styracea *Symplocos racemosa* Roxb. (lotur-bark). See *Dymock* III, 373 and *Loew* I, 24—26.

5. ABHUL أبل *Savin* (*Juniperus Sabina* L.) (Lecl. no. 7).

(*The Book of*) *Agriculture*¹ : There are four kinds. The first is the Indian and is called *Dîbadâr*². It is a tree that reaches a considerable height and its branches grow long; its fruit is like the hazel-nut. The second has leaves like the tamarisc, the third is like the cypress, and both of them have many thorns and a disagreeable and pungent smell. They bear fruits smaller than cypress-nuts. The fourth spreads out (grows) in breadth but not in height and does not bear any fruit at all.

1. Probably the *Nabataean Agriculture* (*Kitâb al-Filâha an-Nabatiyya* كتاب الفلاحة النبطية) of Ibn Wahshiyya, an author who lived about 800 A. D. See Introduction I, no. 24.

2. *Dîbadâr* ديبدار or *Dêbdâr* is the Persian transliteration of the Sanscrit *Dêvadâru*. See commentary.

Ibn 'Imrân¹ : The savin is a kind of juniper with large leaves like those of the tamarisc. It has red, oily fruits like those of the nabk-tree as to colour and size ; they are woolly in the interior and have kernels whose colour is red. When they are ripe they are of sweet flavour and taste like the dripping liquid during the vintage of grapes.

Diosc. 1 (75) : The savin is of two kinds; one has thorny leaves like those of the cypress and a disagreeable smell. It is round and grows more in width than in length. The other has leaves like those of the tamarisc. This is a plant of strong desiccative qualities, cleansing dirty ulcers and is an emmenagogue. It removes unhealthy granulations and is useful to the living ones.

Ibn Sina² : The savin - fruit resembles the medlar, save that it is blacker. It has a pungent odour. *Ad-dibadâr* is one of its kinds called "the Indian pine tree"; its rods are like those of the zedoary. (**Fol. 3 v.**). *Shîr-dibadâr*³, i. e. its milk, is hot, burning, thirstgiving and astringent. There is nothing more excellent for the relaxation of the nerves, hemiplegia, facial paralysis and epileptic convulsions. It crushes stones of the kidneys and bladder and constipates the bowels.

1. Is-hâq b. 'Imrân was a celebrated physician who lived in the first half of the IXth. cent. A. D. at the court of the Aghlabite prince Ziyâdat-Allâh I. in Qairawân (now Tunisia). He wrote a book on simple drugs. See Introduction I, no. 19.

2. This paragraph is not to be found in the printed editions of Ibn Sina's *Canon* in the chapter *abḥul* - savin.

3. *Shîr* شیر is the Persian word for "milk".

Masîḥ¹ : It relaxes the bowels and kills worms, ascaries and tape-worms.

COMMENTARY.

It is the conifera *Juniperus Sabina* L. with its two varieties *var. cupressina* and *tamariscifolia* All. In this, Dioscurides is right, and so is the "Book of Agriculture" when it describes a third variety, a creeping one, *forma prostrata*. But the *dibadâr* has nothing to do with *juniperus*; it is the beautiful Himalayan cedar-tree *Cedrus Deodara* Loud., *deva-daru*, i. e. "tree of the gods". The Arabs were better acquainted with a variety of the *Cedrus Libani* Barr. under the name of *sanawbar hindî* صنوبر هندی i. e. "Indian pine-tree". Savin oil is a strong poison. The abortive qualities of this drug were well-known to the Arabs. For *Deodar* see *Hobson-Jobson* p. 305—6.

Synonyms : Gr. : *βράθυ* (*bràthy*); Ar. : *sariw gaballî* سرو جلی; Turk. : *qara ardiş* قره آردج (*Honigb., Avni 536*); Pers. : *sarw-i-kâhî* سرو کوهی, (*Abû Mansûr*); Eng. : barren savin; Fr. : sabine, savinier; Germ. : Sadebaum, Sevenbaum. For the many other Arabic names see *Issa* p. 102.

6. **ATHL** أثل, *Oriental Tamarisk* (*Tamarix articulata* Vahl) (*Lecl. no. 17*).

1. His real name was 'Isâ b. Hakam عيسى بن حكام. He lived in the IXth. cent. A. D. as a physician in Damascus and Baghdad. See Introduction I, no. 9.

Ibn 'Imrân : It is a large shady tree, has green wood and branches with red tints, and green leaves resembling those of the (European) tamarisk; its flavour is acrid. It has no flowers, but bears fruits at the knots of its twigs in the form of grains like chick-peas and which are yellowish-grey. In their interior are small grains clogged together, which are called the palatable grains of tamarisk. They are collected at the end of July.

Diosc. I (89) : Ἀκακῆλλις (*akakallis*), i. e. Oriental tamarisk (*Athl*), is the fruit of a tree in Egypt, resembling the tamarisk fruit. Its infusion is used for eye-salves that fortify the sight.

COMMENTARY.

The Oriental tamarisk, *Tamox articulata* Vahl, is of very frequent occurrence in North Africa, particularly in Egypt. Its Arabic name *athl* أثل is an old Semitic one : Hebrew *eshel* אשל Assyrian *ashlu*, Ancient Egyptian 𓆎𓅓𓏏𓆎 'sr, and Coptic OCL. The supposed fruits are in reality galls provoked by the sting of a small wasp of the kind of *Cynips*. The galls are still to be found in the Cairo bazaars under the name of *tamr el-atl* تمر الأثل or *habb el-atl* حب الأثل (*Ducros* no.56.).

Synonyms : Gr. : ἀκακῆλλις (*akakallis*); Pers. : (the gall) *kazmâzaj* کزمازج, *Abu Mansûr*, *Schlimmer*¹; Turk. : *tarfa*

1. Abu Mansûr confounds this name with that of *jashmîzaj* چشمیزج or *gazmîzag* جزمیزج which designates the grains of *Cassia absus* L. See *M. Meyerhof*, Histoire du Chichin, remède ophtalmique des Egyptiens. In *Junus* (Leyde XIX, 1914, p 246 note 1).

طرفا *ilghin âghâji* ايلغين أغاجي, *'Avni* (p. 590); Berber : *tâkât* تا كوت, *Idrisi* (p. 20); Engl. : Oriental tamarisk; Fr. : tamarisc oriental. According to *Leclerc* (I, 27 note 1), another Arabic name for the galls of this tamarisk is ' *uâhba* عذبة . See *Issa* p. 177.

7. **ÂRÂK** أرأك, *Salvadora Persica* L. Gaertn.
(*Lecl.* no. 50).

Abû Hanîfa¹ : Its root is most excellent for rubbing the teeth, and it is the most perfumed pasture-food for cattle. It is a thorny, high and lofty tree; its fruits grow in clusters. There is a wild kind that has bigger grains and smaller clusters. It has small, round and hard kernels, and its fruits are a little larger than chick-peas. The largest of its clusters fills the hand, while the big kind is bigger than coriander-fruit. Both of them begin by being green, then become red and sweet with some acidity; afterwards they become black and their sweetness increases, but there is some burning in it. They are sold like bunches of grapes. It grows in valleys and sometimes, but rarely, on mountains. Its thorns are few and scattered.

Ibn Gulgul : Its decoction, drunk, stirs the urine (i. e. diuretic).

Ibn Ridwân² : Its fruit, inspissated, fortifies the stomach.

1. See Introduction I, no. 25.

2. Ibn Ridwân ابن رضوان was a famous medical practitioner in Cairo during the middle of the XIth. cent. A. D. See Introduction I, no. 39.

COMMENTARY.

It is *Salvadora persica* Gärtn. - *Garcin*, a tree that grows in Arabia, Persia and India; it was unknown the Greeks; it is to be found in Upper Egypt and the Egyptian desert (*Ramis* p. 149). Its fruit was still in use at the time of Forskål (p. 32), and known by the name of *kabâth* كبات. Short pieces of the branches and roots are generally in use, in the Near East, as tooth-brushes under the name of *miswâk*. The best kind is said to come from the Holy places of the Higâz (Arabia) - (Mohammedan tradition). *Dymock* (II, p. 380-2) gives a record of the botany and history of the plant which fully confirms the sayings of Ibn 'Imran as quoted by al-Ghâfiqî. It is missing from Idrîsî's book. The use of the tooth-stick is a pious duty to Muhammedans, as the Prophet himself practised it. See numerous references in Wensinck's *Handbook of Muhammedan Tradition* (Leiden 1927) p. 230.

Synonyms : Ar. : *siwâk* سواك, *Dâwûd*; Pers. : *dirakht* -i-*miswâk* درخت مسواك; English : tooth-brush-tree; Fr. : arac. Germ. : Zahnbürstenbaum. For other Arabic names see *Issa* (p. 161).

Its fruit bears the Arabic name *kibath* كبات, IB.

8. ABÂNÛS آبَنُوس, *Ebony* (*Dalbergia Melanoxylon* and *Diospyros* sp.). (Lecl. no. 9).

Diosc. I (98) : The strongest is the Ethiopian. It is black without stripes (veins), resembling polished horn in its smoothness. If broken it is compact. It stings when tasted by the

tongue, and is, if burnt as incense, of fragrant smell. If fresh it is, on account of its oil, easily inflammable when brought near to fire. If rubbed on a whetstone, its colour becomes ruby-red. There is a variety in India in which are white and ruby-reddish veins. Some kinds of a thorny tree¹ and the kind of wood which is called *συκάμινα* (*sykâmina*) are sold instead of ebony. But the latter is loose in texture (porous) and easily breaks into splinters of purple colour which do not burn the tongue; and when put on fire they do not exhale any smell.

Galen VI (XI, 867) : This wood is one of the objects which, when rubbed with water, are dissolved like certain stones. Its juice strongly clears dimness of sight.


COMMENTARY.

Âbânûs are the different kinds of the ebenacea *Diospyros*, especially *D. Ebenum* Kon. from India. The Ethiopian ebony is probably the wood of the leguminosa *Dalbergia Melanoxylon* G.D.R. The false ebony of Diocurides may be, amongst other kinds of wood, that of the leguminosa *Ebenus creticus* L., the "red ebony" from Greece.

Synonyms : Gr. *ἔβερος* (*ébenos*); Lat. : *hebenus* (Pliny); Near Oriental languages : *âbanûs* آبَنُوس; Eng. : ebony; Fr. : *ébène*; Germ. : Ebenholz.

1. This is the translation of Dioscurides' *ἀκάρθινα ξύλα* (*âkânthina xyla*); *συκάμινα* (*sykâminos*) is the mulberry-tree.

As to the etymology see Loew I, 588 - 9.

The word probably comes from Ancient Egyptian  *hbn* which is the name of the tree and the wood (Loret).

9. **ÂS** آس, **Myrtle** (*Myrtus communis* L.).
(Lecl. no. 69).

Abû Hanîfa: It is very common in the West (i.e. North Africa and Spain)¹, on the coast as well as in the mountains; it is evergreen and grows until it becomes a tree. It has a white flower of fragrant smell and a black fruit which, when ripe, becomes sweet; but there is in it at the same time (fol. 3v.) some bitterness. It is called *qatmîr* قطمير.

Diosc. I (112): *Μυρσίνη ἡμερος* (*Myrsine hēmeros*), i.e. the (cultivated) myrtle, is deep green inclining to black and more useful than the white, particularly the mountain variety; but the fruit of the black kind is weaker (less efficient) than the fruit of the white one.

Galen VII (XII, 81): It is composed of opposite faculties, the earthy and cold substance being predominant in it.

Diosc.: The *μυρτιδανον* (*myrtidanon*) is something that grows on the stem of the myrtle-tree and is rugged like the

1. IB (I, 37) and Lecl. (I, 66) read بأرض العرب "in Arabia", our two MSS. في الغرب "in the West". The latter is the correct reading, and, moreover, Meyerhof's hand-written copy of IB reads بأرض الغرب, confirming al-Ghâfiqî's text.

bark of the Egyptian thorn¹. Its colour is like that of the trunk of the myrtle. In its form it resembles a hand and is of stronger astringency than the myrtle itself.

Ar-Râzî in the "Book of the Specific Properties":
When you take a ring of fresh myrtle wood and put it on the little finger of a man who is suffering from a swelling in his groin it soothes the pain.

COMMENTARY.

It is *Myrtus communis* L. The *Myrtidanon* is probably an excrescence of the bark. IB who generally copies al-Ghâfiqî's text carefully omits the superstitious belief recorded by *ar-Râzî* in his book of the Specific Properties. This book is lost and the authorship of *ar-Râzî* may be doubtful, although it is recorded in al-Bîrûnî's catalogue of *ar-Râzî*'s works². *Ar-Râzî* was, as far as we know, not at all inclined to superstition although he cultivated, in his early years, alchemy and astrology.

Synonyms: Gr.: *μυρσίνη* (*myrsine*); Lat.: *myrtus* (Pliny); Türk.: *mersîn* مرسين; Pers.: *mârd* مرد (*Abû Mansûr, Schlimmer*); Eng.: myrtle; Fr.: myrte; Germ.: Myrthe.

Idrisî (p. 10-11), whose paragraph on *âs* is much

1. The word *bunk* بك is missing from most of the Arabic dictionaries. According to the Persian dictionaries (Vullers and Steingass) it is the bark of the *Acacia nilotica*. The same sense is found in Issa p. 2, no. 12. See below no. 119.

2. Julius Ruska, *Al-Bîrûnî als Quelle für das Leben und die Schriften al-Râzî's*, In *Isis* V (1922) p. 48 no. 183.

longer, gives three lines of synonyms. He gives as an Arabic name *raihân* ريحان which is the ordinary name for basil-royal, as the Persian name for the plant *marziyânaj* مرزیانج, and for the fruit *mûrd*; moreover, the Berber name *ajmâm* اجمام. See also Loew's etymological explanations (II, 257-60) and Issa (p. 122-3) who adds some more Arabic names.

10. IGGÂS (Ijjâs) إجاص, *Plum* (*Prunus domestica* L.) (Lecl. no. 21).

It is known amongst us as "cow's eye" عين البقر.

Diosc. I (12): *Kokkymelêa* (Κοκκυμηλέα) is a wellknown tree. Its fruit is bad for the stomach, but laxative to the bowels. The fruit of the Syrian plum-tree, particularly that of Damascus, is, on the contrary, when dried, good for the stomach, but constipating.

Galen VII (XII, 32): The plum, particularly when fresh, is laxative to the bowels; when dry it is less laxative. As to Dioscurides, I do not know how he pretends that the Damascus plum constipates the bowels when we find that it is manifestly laxative, though less laxative than that coming from Inner Armenia¹.

Ibn Mâsawaih²: It empties the yellow gall and lowers the temperature (of the feverish body). The black kind is stronger in this action than the white one; and the small kind has a weaker laxative effect.

1. Galen's original text reads Iberia and not Armenia.

2. See Introduction I, no. 11.

The Israelite¹: The white (plum) is slow of digestion, bad for the stomach and slightly laxative. The best of it are the fully ripe ones.

The Nabataean Agriculture²: The wild plum is a small tree with round leaves smaller than those of the cultivated plum-tree. Its fruit is frankly sour and it does not grow well in gardens.

Galen: The fruit of the wild small plum is very astringent and constipates the bowels.

Diosc: When the leaves of the plum-tree are boiled and the decoction is used as a gargle, it checks the flow of matter to the uvula, the tonsils and the gums.

COMMENTARY.

This is *Prunus domestica* L. and its varieties, e. g. *Damascena*, *Prunus Italica*, *divaricata* etc. *Idrîsî* mentions a red variety and the names given hereafter.

Synonyms: Gr. *προῦμη*, (*proumne*, Theophrastus), *κοκκυμηλέα* (*Diosc*); Lat.: *prunus*, *Pliny*; Ar. *iggâs âsh-shâhlûj* إجاص الشاه لوج (half Persian name), *Idrîsî*; *barqûq* برقوق (modern Egyptian), already given by *Dâwûd*.

أيدب: *idb* (Loret, ancient Egyptian), *khôkh* خوخ (modern Syrian), (*khôkh ad-dibb* خوخ الدب, a wild kind), *'ain al-baqar*.

1. He is *Is-hâq b. Sulaimân* (see Introduction I, no. 20); the quoted passage is probably from his book "On Simple Remedies and Aliments".

2. Of *Ibn Wahshiyya* (see Introduction I, no. 24).

عين البفر, *Dâwûd* (Algerian); Turk: *erik* أريك; Pers. *alû* الو or *alû-yi-berqânî* الوى برقانى *Schlinmer*; Eng.: plum; Fr.: prune (prunier); Germ.: Pflaume, Zwetsche.

See *Loew* II, 163-9, and *Issa* p. 149.

11. UTRUG اترج, *Citron* (*Citrus medica* Risso var. *Limonum*). (Lecl. no. 16).

Abû Hanîfa: It is a cultivated plant and does not occur wild. Its tree produces fruit once a year, for twenty years. Its leaves resemble (in shape) those of the walnut; it is of a fragrant smell. Its blossoms are like narcissus-flowers, only thinner; its tree has thorns as hard as iron.

Diosc. I (115) *Κεδρόμηλα* (*kedrómela*): its fruit remains on it during the whole year¹, and is long shaped, of golden colour and fragrant with but a little disgusting smell². Its seeds are like those of pears.

The Israelite: That kind the interior (pulp) of which is tasteless, is cold and moist in the second degree; and that kind the pulp of which is sour and stinging, is cold and dry in the third degree.

Galen XII (77) (fol. 4r.): Its bark is difficult to digest.

1. This is an erroneous translation from *Diosc. I (115)* who reads: *φρὶὸν γὰρ ἐστὶ καρποφοροῦν δι' ὅλον τοῦ ἔτους ἐπαλλήλως*, "for it is a plant which produces fruit during the whole year in rapid succession".

2. *Diosc.*: *ἐὼδὲς μετὰ θάρονος*, i. e. fragrant with some oppressiveness.

A small dose of it strengthens the stomach and promotes digestion on account of its hot and acid qualities.

Another (author¹): The confection of the pulp with honey is better and more convenient to the digestion.

Ibn Mâsawaih: Its bark perfumes foul breath.

Diosc.: It is said that, when put into clothes, it preserves them from being eaten (by moths).

COMMENTARY.

The word اترج *utrug*, *utruj* is Persian and now designates the orange. The citron or lemon is the fruit of *Citrus Limonum* Risso with its variations.

Synonyms: Gr.: *Μηδικὰ μῆλα*, *Περσικὰ μῆλα*, *κεδρόμηλα*; (*Médika*, *Persika mēla*); Lat.: *citrea* (*Pliny*); Ar.: *laimûn* ليمون; Pers.: *lêmu* ليمو; Turk.: *limôn* ليمون; Eng.: citron, lemon; Fr.: citron; Germ.: Zitrone; Copt.: *monwen* (Scala Magna).

12. ANBAG (Anbaj), انبج, **Mango**. (Lecl. no. 173).

Agriculture²: The mango-tree is frequent in the regions of 'Omân, and grows as a cultivated plant. It is of two colours: one has almond-shaped fruits and is always sweet from the beginning of its growth; the other, plum-shaped, is

1. This author is, according to IB (10), *Ibn Sînâ*.

2. According to IB (65) this passage is extracted from Abû Hanîfa ad-Dinawarî's "Book of Plants".

sour in the beginning and becomes sweet when it ripens. Both have in common a specific odour and a fragrant smell. The sour kind grows in court-yards until it reaches the size of a walnut-tree. Its leaves are like the walnut leaves. When it reaches maturity the sweet is yellow and the bitter red. When it is unripe it should be cooked in earthen pots.

COMMENTARY.

It is the fruit of *Mangifera indica* L., very well-known in all tropical and sub-tropical countries, but unknown in antiquity. For Indian names see *Dymock* I, 393.

Synonyms : Ar. : *anbag* انبج or *anbâ* انبا ; Pers. : same names; Turk. : *hind kerâzi* هندکرازی (*Samy*); Eng. and Germ. : mango; Fr. : mangue.

For other names see *Issa* p. 114.

13. AMLAG (Amlaj), املج , Emblic Myrobalan (*Phyllanthus emblica* Willd.). (Lecl. no. 145).

Ibn 'Imrân : Its fruit is black resembling plums and has round stones, sharp-pointed at both ends. If the bark is removed the stones are split into three parts.

Hubaish¹ : When macerated in milk it loses some of its astringency; that is the *shîr amlag*; it is the sovereign of remedies².

1. He was the nephew of the famous translator Hunain (XIth. cent). See Introduction I no. 14.

2. *Shîr* شير is the Persian word for milk. The following sentence is attributed by IB (56,2) not to Hubaish, but to the Indian physician Charaka.

Badigoras¹ : It strengthens the stomach and is useful for black-bile affections.

Mâsargawaih² : It strengthens the roots of the hair.

COMMENTARY.

It is the fruit of *Phyllanthus emblica* Willd., an euphorbiacea which has nothing to do with the different kinds of myrobalan (*Terminalia*). It was introduced into the pharmacopoea by the Arabs as an astringent and anti-diarrhoeic remedy. Its Persian name is doubtless of an Indian origin *âmâlaka* (see *Dymock* III, 263).

Synonyms : Ar. (Egypt) : *as-sanânîr* السنانير , *amlag* املج *Dawûd*; Pers. : *âmlé* امله ; Turk. : *âmulé* امله , *Samy*; Eng. : emblic myrobalan or myrobolan; Fr. : emblic officinal; Germ. : Myrobalanus emblica, Purgierpflaume.

14. ÂZÂD - DIRAKHT آزاد درخت , *Persian Lilac* (*Melia azedarach* L.).

(Lecl. no. 60).

Ibn Gulgul : A Persian name the meaning of which is "the free tree". Some people pretend that it is the *Persea* (لبغ *labakh*).

Ibn al-Gazzâr³ : Its tree is large and grows in Khurâsân

1. An unknown Byzantine or Syriac physician.

2. See Introduction I, no. 8.

3. See Introduction I, no. 32.

and Syria. It has fruits like those of the medlar in shape and colour, growing in scattered bunches. In their interior are stones like those of the medlar. It has a big stem and is very lofty.

Mâsargawaih : Its fruit which resembles that of the lotus-tree (*Zizyphus Lotus* Lam.) if eaten, kills. Women apply its leaves to their heads to make their hair grow. The expressed juice of the ends of its branches, mixed with honey and boiled grape-juice, is useful against deadly poisons.

Ibn Mâsa¹ : Its flower is a reconstituent for old and cold-tempered people. Its bark, when boiled with black myrobalans and fumitory (*fumaria*), is useful for mucons fever and black-bile affections; it is to be taken in spring and autumn only.

COMMENTARY.

Melia azedarach L. is, like the two preceding ones, a plant which was first made known in the West by the Arabs. It is a native tree of Persia, and is not to be confused with the Indian lilac (*Melia azadirachta* L.). Its toxic qualities were known for a long time in India (see *Dymock I*, 330 foll.). *Abû Mansûr* (152) ascribes to it the same effects given in the original documents of our author. *Al-Idrîsî* (p. 24, no. 39) furnishes a very exact description of the tree. The bark of the roots (*Cortex azedarach*) is a vermifuge.

1. See Introduction I, no. 17.

Synonyms : Ar. : *shishiyân* شيشيان (? *Abû Mansûr*), *tâhak* طاحك (*Dâwûd*), *garûd* جرود (*Syria, Dâwûd*); Mod. Egypt : *zinzilakht* ززلخت (*Dâwûd*), *zenzalacht* ززلخت (*Schweinf.*), *zilzalakht* ززلخت (*Sharaf*) - all mutilations of the Persian name. Pers. : *âzâd-dirakht* آزاد درخت, *tâq* طاق and other names; (see *Schlimmer*); Turk. : *tesbih âghâji* تسبیح آغاجی (i. e. tree for making Moslem beads); Eng. : Persian lilac, bead tree, pride of India; Fr. : *azédarac*, *margousier*, *lilas des Indes*; Germ. : *chinesischer Holunder*, *Paternosterbaum*, *Paradiesbaum*.

The names given by *Issa* (p. 116) refer partly to the Indian lilac.

15. **AMBARBÂRIS** امبرباریس, **Barberry** (*Berberis vulgaris* L.) (Lecl. no. 146).

Most people erroneously write, instead of the first *bâ* ب a *yâ*; but the correct reading is a *bâ* with one point only, a *sukûn* on the *mîm* and a *kasra* under the *bâ*¹; the *mîm* can just as well be written a *nûn* ن.

(**Agriculture**) : Some people thought it was the red box-thorn (*lycium*), 'awsag عوسج; but it is not.

Of both of them come the box-thorn-berries, and both have iron-hard thorns similar to those of *lycium*. The Khorassanian kind is better than the Greek and the Yemenite.

Ar-Râzî (Rhazes) : It confines the bowels and is good for the inflamed stomach and liver.

1. The name is written, indeed, in most of the pharmacological MSS., and even in the printed edition of IB (p. 55) *amirbaris* أميرباریس which is a mistake.

COMMENTARY.

Berberis vulgaris L. and other kinds were unknown in the Greek pharmacopoeia. In former times the roots, leaves and fruit were official drugs (*Radix, Folia, Fructus Berberidis*).

Synonyms: Ar. : *ambarbâris* امبرباريس and *barbâris* برباريس (*Dâwûd*), 'ûd ar-rîh عود الریح (Egypt, *Dâwûd*) Pers. : *zirishk* زرشك (*Âbû Mansûr* and *Dâwûd*); Turk. : *qadyn tuzlughy* قادین تزلغی (*Samy*); Eng. : barberry, pepperidge; Fr. : épine-vinette; Germ. : Berberitze, Sauerdorn.

The bark of the roots is called by the Berber name *ârgîs* (IB no. 4). For more names see *Issa* p. 30.

16. **AKHARSÂG** آخرساج, (Undetermined).
(Lecl. no. 26).

Nabataean Agriculture: It is a tree which (fol. 4 v.) grows in hot and arid places; it reaches the height of a tall man. Its wood and leaves are like those of the fig-tree, only a little larger, of palatable flavour; its fruit has no stones and, if eaten, is emminative and cleanses the orifice of the stomach. From this tree and its roots small, short spiders generate. They are veiled by a white membrane beneath which they creep when it is lifted up; and this is the reason why it disgusts people and makes them abstain from eating it. The decoction of the fruit and leaves, when poured on a gouty swelling, soothes the throbbing pain.

COMMENTARY.

Nobody has been able, until now, to identify this plant. According to *Meyer* (III, p. 61) and *Lecl.* (I, p. 34) it must be a kind of fig-tree. The Persian dictionaries do not help us. *Vullers* (I, p. 636-7) gives the names of *khârsak* or *khârsa* خارسه and *khârsak* خارسك as that of a triangular spine called in the West *himnis al-amir* حمص الأمير; but this plant is the calthrop (*Tribulus terrestris* L.)

17. **ARUZ** أرز, **Rice** (*Oryza sativa* L.). (Lecl. no. 42).

Diosc II (95): "Ὠρυζα (*Oryza*); it is a kind of a commonly used grain; it grows in swamps and wet places. It is a little nourishing and confines the bowels.

Galen VIII (XII, 92): It confines the bowels moderately and is more difficult to digest and less nourishing than the *zôrdos* (khondros, i. e. groats of wheat or spelt)¹.

Ibn Mâsawaih: Its grains are the most nourishing next to wheat, and the best tempered. They strengthen and tone the stomach.

Ibn Mâsa: The Indians allege that it is the best and most useful of all the aliments if taken with fresh milk; and they pretend that a strict diet of rice prolongs life and does

1. The last words are missing from the Kuehn edition of Galen's *De Simpt. Medicam Virt.*

not form in the body yellow gall or any other by-products.

The Israelite : When boiled with bran-water or whey, it considerably increases the spermatic fluid.

COMMENTARY.

Rice (*Oryza sativa* L.), as is evident from the quotations by *al-Ghâfiqî*, was not greatly valued by the Greeks. An interesting passage in the Persian *Abû Mansûr's* book (p.141) informs us that the Greeks preferred wheat as an aliment, but that the Indians recognised, from an early period, the nutritive and dietetic value of rice. It was from India that the medical knowledge about rice came to Moslem physicians.

Synonymys : Ar. : *aruz* أرز¹; Pers. : *birinj* برنج; Turk. : *pirinj* برنج; East-Turk. (Tshagatai) : *tuturghân* تترغان, (*Idrîsî* p. 11, no. 6); Eng. : rice; Fr. : riz; Germ. : Reis.

18. ÂNÂGHALLÎS أَنَاغَالِيس , *Pimpernel* (*Anagallis arvensis* L.).

(Lecl. no. 167).

Diosc. II (178) : Some people call it *κικχόριον* (*kikhórion*, chicory). It is of two kinds : one has an azure-blue flower;

1. As to the names of the varieties of rice in Modern Egypt see *Sharaf* (p. 579), and *Issa* (p. 131).

this is the female, and the other an intensely red flower; this is the male. Both are plants which spread out on the ground, have small round leaves like those of the plant called *ελξίνη* (*helxine*, probably *Parietaria*) on quadrangular stalks; also round fruits. Both are used against the spread of malignant ulcers. It is said that the blue kind reduces the prolapsed anus, but that the red one increases the prolapse, when used as cataplasms.

Galen VI (XI, 829) : Both of them extract arrow-heads (from wounds).

Oribasios : Its expressed juice, with headed thyme (*hâshâ* حاشا, *Thymus capitatus* Lk.) and black mustard (*khardal* خردل, *Brassica sinapioides* Roth.), extracts leeches from the throat¹.

COMMENTARY.

Anagallis arvensis L. is a wide-spread primulacea. Its active principle is saponin. *Al-Idrîsî* (p. 16 no. 20) gives a more detailed botanical description of the plant, with many synonyms (Berber, "Latin" i. e. Spanish etc.). *Sickenb.* (Arzn. p. 24) identifies it with *Anagallis arvensis* L. and *A. coerulea* Schreb.

Synonyms : Gr. : *ἀναγallis*; Lat. : *macia* (Marcellus

1. This is not a rare accident in Oriental lands where stagnant waters are infected with leeches.

Empiricus); Ar.: *qâtil al-'alaq* قاتل الملق (i. e. that which kills leeches) or *hashîshat al-'alaq* (in Spain, *Idrîsî*)¹; Pers.: *ânâghâlîs* آنانغالی; Turk.: *bagîrsâq otu* باغرساق اوتی (*Honigh*, p. 517), *merbejâné* مرعجانه ('*Avni* p. 33); Eng.: pimpernel; Fr.: mouron; Germ.: Gauchheil, Hühnerdarm.

For more Arabic names see *Issa* p. 14.

19. **ADHÂN AL-FÂR AL-BUSTÂNÎ** آذان الفار
Domesticated Myosotis (*Parietaria cretica* L.) (uncertain).
(Lecl. no. 31).

Diosc. II (II, 183)²: Its leaves are like the ears of mice. It is called in Greek *âloînê* (alsinê)³ i. e. growing in gardens, because it grows in shadowy places and in gardens. It resembles the *êlêxînê* (*helxinê*, *Parietaria*?), but has smaller leaves without downy hairs. When rubbed in the hands it exhales a smell of cucumber. Its faculty is cooling and astringent.

Galen VI (XI, 874): It resembles in its faculty the herb which melts glass⁴ for it is cooling and moistening and generally acts like *êlêxînê* (*helxinê*).

1. Modern Egyptian names: *lubbên* لبين, *umm laban* أم لبن, *qunfud* قنفذ (*Schweinf.* 6); the latter name is used in the Western Oases of the Egyptian desert.

2. The text reads *Diosc. IV*, an error which has been copied by Ibn al-Baitâr.

3. This word is derived from *âlos* (âlsos), grove.

4. Not so in Galen's original text.

COMMENTARY.

This plant cannot be determined with certainty. It might be *Parietaria cretica* L. (pellitory). Ibn Sînâ, Abû Mansûr, al-Bîrûnî and al-Idrîsî do not help us, as they only know one kind of myosotis, evidently that described by al-Ghâfiqî in the following chapter.

Synonyms: Gr.: *μυὸς ὄτια*, *ἀλοῖνη*, Lat.: *vitraria*;
Ar.: *hashîshat az-zugâg* حشيشة الزجاج, *hashîshat al-qazâz* حشيشة القزاز, *hashîshat ar-raml* حشيشة الرمل (*Sharaf*, 605), *hashîshat ar-rîh* حشيشة الريح (Algeria, *Schweinf.*, 222); Turk.: *yapîshqân otu*; *yapîshqân* أوني (*Avni* 448); Eng.: wall pellitory, Fr.: pariétaire; Germ.: Glaskraut. For other names see *Issa* p. 134.

In Coptic it is called "ears of the mouse" ⲙⲁⲗⲁⲕⲉ ⲙⲓⲛⲓⲛⲓⲛ
(Crum, Dictionary, *infra verbum*).

20. **ÂDHÂN AL-FÂR AL-BARRÎ** آذان الفار البري
Wild Myosotis (*Myosotis palustris* L.).

(Lecl. no. 32).

Diosc. II (183): *μυὸς ὄτια* (*myôs otis*) has many stalks growing from one root which is of the size of a finger, (fol. 5r). Their lower part is reddish and hollow, and they have long yellow-blackish leaves with pointed ends standing in twos (zygophyllous) with a space between them. From the knots, small twigs branch off on which are small azure-blue flowers. It resembles, in general, the *σκολοπένδροιον* (*skolo-*

pendrion, hart's tongue), except that it is less rougher and smaller.

Galen VII (XII, 80): It dries in the second degree, but has no perceptible heating power.

COMMENTARY.

It is probably *Myosotis palustris* With., but might be *Asperugo procumbens* L., according to *Sickenb.* (Arzn. p. 6).

Synonyms : Gr. : *μυὸς ὠτίς* (*myós otis*): Lat. : *myosotis*; Ar. and Pers. : *âdhân* (*âzân*) *al-fâr* آذان الفار; Ar. (Morocco): 'ain al-hudhud عَيْنُ الْهُدُود (IB); Turk. : *sichân qûlâghi* سِيچَان قولاغی (four other names are given by Samy 1509-10); Eng. : mouse ear, forget-me-not; Fr. : *myosotis*, *pensez-à-moi*, ne m'oubliez pas; Germ. : *Vergissmeinnicht*.

21. ADHÂN AL-FÂR BARRÎ ÂKHAR آذان الفار آخر
Another Wild Myosotis (*Heliotropium undulatum* Vahl.).

(Lecl. no. 33).

Anonymous Author¹ : A plant which grows in the sand, spreading out its twigs on the ground. It has small leaves resembling those of the domesticated *myosotis*. Its

1 IB (p. 17 l. 16) ascribes this chapter to al-Ghâfiqî, but the above quotation shows that the latter copied it from the work of an anonymous author who probably was a Medieval Egyptian Arab. This chapter has been much abridged by BH.

expressed juice, smeared on the penis and soft parts of the abdomen, restores potency to old men and those incapable of coitus; it grows very commonly near Cairo and Alexandria.

COMMENTARY.

Dragendorff (p. 563) thinks that this plant is *Myosotis stricta* Lk. But we believe it to be one of the numerous desert plants, and think that *Sickenb.* (Plantes p. 20) is right in identifying it with the borraginacea *Heliotropium undulatum* Vahl., which agrees well with the description.

22. ÂDHÂN AL-FÂR ÂKHAR آذان الفار آخر,
Another Myosotis (unknown).

(Lecl. no. 34).

Ar-Râzî (*Rhazes*, in his "Book for Those Who Have no Physician at Hand")¹ : It is one of the *euphorbias* (*tithymals*) with leaves like those of *myosotis*, and downy white hairs on them; it has thin thorns also, covered with white downy hairs. When it is plucked, milk flows from it. It is a powerful purgative and emetic.

1. This book also called *Tibb al-Fuqarâ* طب الفقراء ('The Medicine of the Poor') is the 38th in the long list of Râzî's works given by IAU (I. p. 316 l. 18 foll.). It was printed at Lucknow in 1886, but that edition is very rare, and we are not able to verify the above-mentioned quotation.

Hubaish: Its strength is less than that of the raper. spurge (*Euphorbia lathyris*, *mâhûdâna* مامودانة), and the wild kind, growing far from water, is sharper and thinner.

COMMENTARY.

Identification of this plant has hitherto been impossible.

23. AWTĤÛNÂ (*Uthûnâ*) أوثونا, 'Oðónna *Othonna* (unknown).

(Lecl. no. 208).

Diosc. II (182): It is said that it is the expressed juice of the black *χελιδόνιον* (*chelidonium*, celandine), or of the horned poppy (*glaucium*); it is also said that it is the juice of the poppy called *κερατῖτις* (*keratitis*) or the horned (*Glaucium corniculatum*), or that it is the juice of the blue *anagallis*. Others say that it is a plant growing in that part of Arabia contiguous to the frontier of Egypt (i. e. the Sinai Peninsula), with leaves like those of the water-cress, full of holes as if eaten by moth-worms, sapless and brittle. The flower is saffron-coloured and its petals are large. Some people therefore take it for a kind of anemone. Its juice cures dullness of the sight. Others say that *Othonna* is a copper-coloured small stone in Upper Egypt, burning when touched with the tongue.

COMMENTARY.

It has not been possible, so far, to identify with certainty the plant *Othonna*. *Dâwûd* mutilates the name to *Uwwaina* أويينا, but gives the same description. *Sickenb.* (*Plantes* p. 25) observes that Sprengel, Fée and others did not pay attention to the fact that all their identifications (*Tagetes*, *Argemone* etc.) were with plants of American habitats. Sickenberger himself proposes *Glaucium corniculatum* *Curtis*, the horned poppy. To this, however, we object, because there exists another Greek name (*μήκων κερατῖτις*, *mêkôn keratitis* *Diosc. IV*, 65) and an Arabic one (*mâmîthâ* ماميثا) for this plant which has always been well-known. According to *Loew* (II, 374.5) it is not possible to identify the plant; the name is neither Syriac nor Arabic. *Issa* (p. 131) identifies it with a kind of ragwort-composita to which modern botanists gave the name *Othonna* *L.*

24. ÂGHÂRÎQÛN اغاريقون, *Fungus of the larch*, *Purging agaric* (*Polyporus officinalis* *Fries*).

(Lecl. no. 1622 *Gharîqûn* غاريقون).

Diosc. III (1): It is a root similar to that of *silphium* (see no. 34), though not dense from outside like its root but quite loose. It is of two kinds, male and female. The female is the better one; it has in its interior flat

layers; but the male has no such layers at all. Both of them are alike as to flavour, giving, when first tasted, a flavour of sweetness that changes to bitterness. Some people allege that it is the root of a plant; while others believe that it is generated from putrefaction in trees when worm-eaten, like those on which mushrooms are generated. That which is generated on larch-trees in Cilicia is easily crushed and of weak strength.

Galen VI (XI, 813): It is a compound of two substances, airy and earthy. (**fol. 5 v.**) It opens obstructions of the liver and repels thick mixtures (of the humours).

Another Author: The dose of it is one *mithqâl*. It is said that he who carries it about is never stung by scorpions. The hard and black specimens, which are the old ones, are very bad.

COMMENTARY.

This is *Polyporus officinalis* Fries. IB who gives a much longer chapter on it, calls it *ghârîqûn* غاريقون, a name still in use in most of the Mohammedan lands, (IB II, 146; Lecl. III, 4-6). This fungus grows on larch trees and in antiquity came from Russia (Sarmatia). The officinal *Fungus Laricis* was, in the XIXth cent., a well-known laxative, mostly from the Siberian larch-tree, (*Achundow, Abû Mansûr* p. 339), The active principles of the drug are agaricine and a resin.

Synonyms: Gr: ἀγαρίκον; Lat.: agaricum; Ar. and Pers.: *ghârîqûn* غاريقون; Turk.: *qatrân kopüzi* قاتران كوپوزى (*Avni* 19); Eng.: purging agaric, fungus of the larch; Fr.: polypore du mélèze, agaric blanc; Germ.: Lärchenschwamm.

25. ISHKHÎS اشخيس, *Pine-Thistle etc.* (*Atractylis*, *Echinops* and others).

(Lecl. no. 86).

This is the resin-thorn¹ and in Greek χαμαιλέων or chamaeleon; it is called χαμαιλέων on account of the difference (in colour) of its leaves, which occur in bright green, white, sky-blue, or blood-red, according to the place in which the plant is growing. Χαμαιλέων λευκός (*khamailéon leukós*)² or the white χαμαιλέων (chamaeleon), is also called ἰξία (*ixia*) because the plant produces at its root in some places ἰξός (*ixós*) i. e. a viscous matter; from ἰξός is derived ἰξία, the meaning of which is "the viscous". Its leaves resemble those of the thistle called in Syria 'akkûb عكوب (the globe-thistle, *Echinops allobos* Diosc.) or that which is called σκόλυμος (*Scolymus hisp.*, golden thistle). In its middle grow thorns like the prickles of the sea-urchin or

1. This name (*shawkat al-'ilk* شوكة الملك) was, according to IB (I, 36), a Spanish-Moorish name.

2. This name of the plant is given by Theophrastus (IX, 12, 1) and Dioscurides (III, 8). The quotation of the latter is missing from our MSS.

the thorns of the *κινάρα* (*kinára*, artichoke). It has purple flowers like hairs, and fruits like those of the cartham. The root in earthy soil is thick, and in rocky soil thin and white inside. It is of a somewhat disagreeable odour; its taste is sweet. Its root, when taken in a drink, expels tape-worms and stirs¹. When kneaded with water and oil it kills dogs, pigs and mice, and the drinking of it is useful against the bite of venomous reptiles.

Diosc. III (9); *χαμαιλέων μέλας*, (*khamailéon mēlas*) or the black, has leaves also like the thistle called *σκόλυμος* (*skólymos*), except that they are smaller, thinner and blood-red in colour. Its stalk is as thick as a finger and of a span in length, its colour is almost blood-red, and there is on it an umbel (corymb) with thorny and thin flowers, the colour of which resembles that of the flower called *ὑάκινθος* (*hyákynthos*, hyacinth) on which there are spots. Its root is thick and solid, burning the tongue when chewed. It grows in dry deserts, on hills and sea-shores.

Galen VIII (XII, 154): Its root possesses a deadly poison, and is, therefore, useful for scabs, eczema and white leprosy (vitiligo).

COMMENTARY.

The white *chamaeleon* is *Atractylis gummifera* L., the

1. Viz. urine, menses etc. The word could be a copyist's error for *والود* (*w'al-dûd*), i. e. "and ascarides".

black *Cardopatum corymbosum* Pers. (*Dragend.* p. 685); 'akkûb is *Echinops viscosus* D. C.; *σκόλυμος* *Scolymus hispanicus* L.; *κινάρα* *Cynara Cardunculus* L. They are all thistle plants, most of them were mentioned by Theophrastus. The artichoke-gum (*kankar zad* ككرزد) is a product of these plants.

Synonyms: Gr.: *χαμαιλέων*, *ἄκανθα*, *ἄκανος*, *ἰξία*, *ἰξίρη* (*ἄκανθος*); Lat.: *chamaeleon*; Ar.: *ishkhîs* اشخيم; *shawk al-'ilk* شوك الملك (Maghrib: *Dâwûd*); Eng.: pine-thistle, spindle wort, Fr.: *caméléon blanc*; Germ.: *Mastixdistel*, *Gummidistel*.

Issa (pp. 27 and 64) gives many other Arabic synonyms.

26. AQANTHIYÛN (*Akanthion*) *أنتيون* Cotton Thistle (*Onopordon Acanthium* L.).

(Lecl. no. 122).

This is the thistle which is known by the name of *tawb* طوب .

Diosc. III (16): It is a thistle-plant with leaves like those of the thistle called *ἄκανθα λευκή* (*akantha leuké*) i. e. the *bâdhaward* بازورد². It has thorny heads, and it is said

1. IB II, 419 (Lecl. no. 1480 bis) says - probably from al-Ghâfiqî's unabridged work - that *tawba* طوبه was the foreign name which the Christians in Spain gave to the *acanthion* - thistle. It is still the name used in Spain.

2. Persian *bâdhaward* بازورد, i. e. the thistle *Cnicus Acarna* L. (*Pienomon Acarna* Coss.).

that it has downy hairs which, when gathered, resemble cotton. Its roots and leaves, in drinks, are useful for plegias.

Galen VI (XI, 818): Its root and seeds¹ are useful to sufferers from spasms.

COMMENTARY.

It is *Onopordon Acanthium* L. (*Dragend.* p. 688), a thistle growing in Central and Southern Europe, and in Asia Minor.

Synonyms: Gr.: ἀκανθιον; Lat.: acanthium, *Pliny*; Ar.: rās ash-shaikh راس الشيخ IB (no. 122), shukâ'a شكاهه (IB, 1335), shôk al-homâr شوك الحمار (Loew I, 448); Pers.: kangar كنگر Turk.: eshek diyini اشك دینی (?) tekîn otu تکین اوتی (Handjéri); Eng.: cotton-thistle; Fr.: charbon aux ânes, fausse acanthe; Germ.: Eselsdistel, Krebsdistel, Wegdistel; Span.: cardo borriquero, toba (*Botica* 398).

27. AFSINTÎN أفسنتين, *Wormwood* (*Artemisia Absinthium* L.) and others.

(Lecl. no. 113).

The leaves of the wormwood resemble greatly those of the carrot; its flower is yellow and it is this part which is used².

1. In Galen's original text "leaves" instead of "seeds".

2. This sentence is ascribed by IB (I, 41) to Abû 'Ubaid al-Bakrî.

Diosc. III (23): It is a well-known plant and is found in Cappadocia, on Mount Taurus.

Ibn Guraig¹: It is of many kinds. It is brought from Persia and the Eastern regions, as well as from the Lukam (Amanus) Mountain. The best is that from Tyrus and Tarsus; it is covered with downy hairs and has nodosities like the seeds (**fol. 6 r**) of the Persian marjoram (*Origanum*). That (kind) is strongly bitter, and, when pounded, tiny particles splinter away from it like the splinters of Socotrine aloe; they are yellow like the down of young pigeons.

Galen (in the Methodus Medendi): All kinds of wormwood are possessed of two qualities and two faculties², but that which is imported from Pontus is most astringent.

Diosc.: It purges the galls (bilious humours) from the stomach, is laxative and diuretic.

COMMENTARY.

This is mostly *Artemisia Absinthium* L., and other kinds of Mediterranean *Artemisia*, *A. arborescens* L., *A. pontica* L. etc. The active principle is absinthine.

1. Nastâs b. Guraig نسطاس بن جريج, with the surname "the monk" الراهب, was a Christian physician in Egypt in the Xth cent. See Introduction I, no. 29.

2. Viz. astringency and bitterness.



Bîrânî says that, according to Ibn Mâsawaih and ar-Rasâ'ilî, there are many kinds of wormwood, -Nabataean, Persian, Khorassanian, Syrian and North-African (*maghribî* مغربي). The best is the Syrian, particularly that of Tarsus (*Tarsûs* طرسوس) "which resembles the down of chicken in its yellow colour". He adds that some physicians call it "Greek wormwood" (*shîh rûmî* شيج رومي). In Egypt *Artemisia Absinthium* L. is lacking (*Ramis* p. 193); *Sickenb.* (*Plantes* p. 21) thinks that the *afsintîn* of Egypt is *Ambrosia maritima* L.. But this plant bears, according to *Forskâl* (p. 161) the name of *damsîsa* دمسيسه.

Synonyms: Gr.: ἀψιθιον; Lat.: absinthium, santonica herba (Scrib. Largus); Ar.: *shih* شيج, *shih ar-rabî* شيج الربيع, *daqn ash-shaikh* دقن الشيخ (i.e. "the old man's beard"), *shaiba* شيبه ("white hair"), *shagarat Maryam* شجرة مريم (Algeria) *Lecl.* I, 105; Berber: *tâstalt* تاشتلت, (*Idrîsî* I, no. 1); Pers.: *afsintîn* افسنتين (*Abû Mansûr*); *qârtaûdi* قورتاودی, *khâr-akûsh* خار اکوش, (*Schlimmer*); Turk.: *pelin* پلين, *âq pelin* آق پلين (*Avnî*); Eng.: common wormwood; Fr.: grande absinthe, armoise amère, aluïne; Germ.: Wermut, bitterer Beifuss; It.: assenzio; Span.: yeno.

Ibn al-Baitâr (IB I, 41) gives the name *damsîsa* دمسيسه as the Egyptian name of the wormwood, in the XIIIth. century. On the other hand, Ascherson and Schweinfurth stated that none of the above-mentioned kinds of *Artemisia* grows in Egypt. So the Egyptian *damsîsa* must have been the name of one of the other species of this

composita. Sickenberger proposes *Ambrosia maritima* L., *Sick.* (*Plantes* p. 21). *Vide suprâ.*

28. **USTÛKHÛDHÛS** اسطوخودوس, *Lavender* (*Lavandula Stoechas* L.).

(*Lecl.* no. 62).

Diosc. III (26): It grows on the islands Στοιχάδες¹ (*Stoichades*) which are in the Land of Γαλατία (*Galatia*, i. e. Gallia) opposite Μασσαλία (*Massalia*, i. e. Marseilles). This drug herb was designated by the name of one of those islands. It has a main part (i. e. foliage) like that of the thyme (origan), except that its leaves are longer and of pungent and slightly bitter taste. It is good for diseases of the chest, like hyssop.

Galen VIII (XII, 136): It fortifies all the inner organs.

Ibn Mâsa: Its virtue is to clear the brain, and it is useful against black-bile diseases.

Diosc. V (42 and 43): Its wine reduces thick swellings and inflations; a vinegar is prepared from it in the same manner as the wine².

1. Called do-day "Isles d'Hyères".

2. The description of the preparation of this wine of lavender has probably been deleted by BH, but is to be found in IB (I, 24).

COMMENTARY.

Lavandula Stoechas L., the "French lavender" is to-day common on the whole Mediterranean coast; it forms, moreover, in some parts of Western and Southern Anatolia the most important part of the vegetation. On the other hand the lavender varieties which are to-day so frequent in Southern France are *Lavandula spica* D. C. (spike) L. and *vera* D.C. or *L. latifolia* Vill.. Therefore *Dragend.* (571) thinks that these latter are the kinds corresponding to the *stoichas* of Dioscurides and the Arabs. Curiously enough this drug, though existing everywhere in Southern Europe, was much appreciated until a century ago, where it was collected and dried in Northern Arabia, whence it was exported to Venice via Cairo and Alexandria, under the name of *Flores Stoechados arabicae* (note by *Achundow* in *Abû Mansûr* 339).

Bîrûnî says that it was brought to his town (Ghazna in Afganistan) from the Mountains of Lengistân لنگستان.

Synonyms: Gr.: *στοιχάς* (*stoikhâs*); Lat.: *stoechas*; Ar.: *lihlâh* للاح (Maghrib, *Dâwûd*); the fruit: *kammûn hindî* كمون هندي (*Dâwûd*). Many other names in *Issa* p. 106. Ar. and Pers.: *ustûkhûdhûs* اسطوخودوس (derived from the genitive of the Greek word); Turk.: *husâme* حسامة, *lavanda otu* قره باش اوتی (*Honigb.*); Eng.: French lavender; Fr.: *lavande stoechas*; Germ.: *Schopflavendel*.

Lecl. (I, 60) gives several modern Arabic and Berber names of the plant.

There seems to be no other Persian name than *ustû-khûdhûs*, (*Mu'tamad* p. 389). Bîrûnî mentions the name *dahâr* دهار as known in Sind (lower valley of the Indus); indeed the name *dhâru* is still vulgarly used in India (*Dymock* III, 93). *Naficy* (II, 21) gives Arabic names used in Persia.

29. **ÂLÂLÎSFÂQÛN** ألاليسفاقون *Sage* (*Salvia officinalis* L.)

(*Lecl.* no. 140).

Ἐλελίσφακον (*Elelîsfakon*) is the sage (*as-sâlimâ* السالمة).

Diosc. III (33): It is also called *σφαγγρον* (*sfâgnon*), and is a long *θάμνος* (*thâmnos*) i. e. shrub or bush, with many branches the shoots of which are quadrangular and of whitish colour. Its leaves are like those of the quince tree; only they are longer, narrower and a little rougher. At the end of the twigs is a fruit like that of the will *δομινον* (*horminon*) i. e. *al-qilqil* القلقل¹; it grows in rough, uneven places. The decoction of its leaves and branches is diuretic, emmenagogue and abortive and is useful for the sting of the marine *trygôn* τρυγών .

1. This is an erroneous translation: *δομινον* of the Greeks is a kind of sage (*Salvia viridis* L.) whereas *al-qilqil* is very probably *Cassia Tora* L.

2. A kind of sting-ray, perhaps *Raja clavata*.

Galen VI (XI, 873): It is manifestly hot and slightly astringent.

Ibn Gulgul: It is useful for numbness of the tongue and for aphasia.

COMMENTARY.

It is *Salvia officinalis* L. and its variants (see Dragend. 576). The medicinal parts used in the pharmacopoeias are the leaves, *Folia Salviae*. *Dâwûd* gives the mutilated Greek name *alfâfis* الفافيس.

Synonyms: Gr.: ἐλελίσσρανον, ἐλαφοδόκον Lat.: salvia; Ar.: *sâlima* سالمه, *siwâk an-nabî* سواك النبي, *nâ'ima* ناعمه (*Dâwûd*, Loew II, 102); *maryamiyya* مريمية (Mod. Egypt., Schweinf.), *quwêsa* قويسه (Syria, Berggr.). Other names in Issa p. 162; Pers.: (*Abû Mansûr* has no name for it), *giyâh-i-tashnak* گیاه تشنک, *Maryam gûli* مريم گول ("Mary's rose"), *Schlimmer* (502); Turk.: *ada chaby*, آطه چابی *Avni* (543); *dîsh otu* دیش اوتق (*Honigb.*); Eng.: common garden sage; Fr.: sauge officinale, petite sauge; Germ.: Salbei.

30. IKLÎL - AL - MALIK أكليل الملك, *Melilot*.

(Lecl. no. 128).

Is-hâq b. 'Imrân: This plant possesses leaves which are round like a *dirham* (piece of money)¹; it is green, sappy,

1. This comparison of the leaves with a *dirham* درهمية is to be found also in *Idrîsî's* book (I, p. 17 l. 20).

with very thin twigs and scarce leaves. It has small yellow flowers followed by thin and curved hucks (*mazâwid* مزاد) resembling children's bracelets; they contain small round grains, smaller than the grains of mustard. The part used is this ring-shaped pod (*iklîl* اكلیل) with its contents.

Author: There are so many differences of opinion that I have no precise knowledge of the question, except that for me, the kind mentioned by Is-hâq is the best. It is a plant of a bitter flavour and fragrant smell. But that which is commonly used in our land (i.e. Spain) is another plant known under the name of *Trefolia*¹ which has broad leaves nearer to those of the larger plantain, also coloured, bent and thick pods variegated with white, green and purple. The seeds are smaller than those of the fenugreek; they are viscous and devoid of flavour and smell.

Some people use another plant which has thin twigs. It spreads out on the soil with leaves like those of the water-calthrop (*Tribulus terrestris*). Its fruits are horns curved like swords, resembling the horns of oxen. They grow together in sixes or sevens (**fol. 6 v.**), having inside them fruits like fenugreek seeds.

Some people allege that the melilot which is used in Alexandria is a plant of a fragrant smell, high-grown, and whose leaves resemble those of the trefoil; its smell is like

1. In the text of T and G *furfûliya* فرفولیه in that of IB (I, 50 l. 16) *qurnûliya* قرنولیه.

that of the fig-tree, somewhat aromatic; its flowers are yellow and thin, and at the end of its twigs there are sleek pods like those small and yellow larvae which are found under the ground in the spring¹.

Ibn Sînâ: It is a plant with a flower of straw colour, semilunar in shape and hard though of light consistency; some kinds of it are yellow and some are white, the latter being the best, particularly when they are very hard.

Diosc. III (40): *Μελίλωτος* (*melilôtos*). The best kind is that which grows in Attica, Kyzicus², Karchedon³ and Chalcedon⁴. It is yellowish-white and of fragrant smell. A little of it grows in Campania near Nola⁵; it has seeds resembling those of fenugreek and is of a fragrant smell.

Galen VII (XII, 70): Its faculty is astringent, combined with dissolving and maturing power.

COMMENTARY.

It is the leguminosa *Melilotus officinalis* Lam.; *Dra-*

1. Ibn al-Baitâr (I, 50, 1. 25 foll.) writing about a century after al-Ghâfiqî-says that at his time this variety of melilot was unknown in Alexandria.

2. A sea-port of Mysia on the Marmara.

3. The Greek name of Carthage. It is an interpolation by an early copyist.

4. A sea-port of Bithynia (Asia Minor).

5. In Italy near Rome

gend. (p. 315). however, knows 16 medicinally used kinds of melilot. *Abû Mansûr* (p. 150) speaks of seven kinds of melilot in Persia. In Egypt there exist, in our days, four kinds (*Ramis* p. 109). But the officinal melilot is not extant in Egypt, and so IB's assertion is right. The Egyptian kind mentioned by Gh is, according to *Sickenb.* (*Plantes* p. 23), *Trigonella hamosa* L.. The officinal drug *Herba Meliloti* is still used in many countries for plasters and compresses against rheumatic affections.

Synonyms: Gr.: *μελίλωτος* (*melilôtos*); Lat.: *melilotus* (*Pliny* XXI); Ar.: *iklîl al-malik* اكلیل الملك, *nafal* نفال, *hantam* حنتم, (*Dâwûd*); more names in *Issa* p. 116. Pers.: *iklîl al-malik*; Türk.: *guzel* (Sainy), or *nefis qoqulu sari yonja* کوزل أو نفیس قوقولی ساری یونجه (i. e. "sweet-smelling yellow trefoil"), *Avni* 375, *pira otu* پیرا اوتی (*Honigb.*); Fr.: *melilot officinal*; Germ.: *Steinklee*, *Honigklee*; Span.: *trebol oloroso*, *corona del rey* (literal translation of the Arabic *iklîl al-malik* i. e. "the king's crown").

31. **IKLÎL NABÂT GABALÎ** اکلیل نبات جبلی, *Rosemary* (*Rosmarinus officinalis* L.)

(Lecl. no. 129).

It is a well-known plant reaching more than a cubit in height with long and thin leaves like fringes, coarse and blackish. Its wood is rough and hard. It has, at the origin of the leaves, a tender whitish-blue flower. Its fruit is hard

and opens itself when dry to let out thin seeds, thinner than those of the mustard-plant. In its leaves is a sharp, bitter and astringent flavour, with an aromatic smell. It is diuretic, dissolvent and aperient¹. In our country (Spain) hunters put it in the interior of venison to prevent its rapid putrefaction.

COMMENTARY.

Rosmarinus officinalis L. is also a well-known labiatae-plant. The leaves and flowers are medicinal drugs (*Folia, Flores Rosmarini*). It is curious that al-Ghâfiqî does not quote Dioscurides who describes the rosemary under the name of *λίβανωτίς* (*libanotis*) in book III chap. 75. IB, who always follows al-Ghâfiqî, rebukes there al-Idrîsî who quotes this chapter from Dioscurides (*Idrîsî* p. 18, l. 5); but IB is wrong, as already stated by *Lecl.* (I, 120). The Arabic name *iklîl al-gabal* اكلیل الجبل or *iklîl gabalî* اكلیل جبلی means "crown or umbel of the mountain".

Synonyms: Gr.: *λίβανωτίς*; Lat.: *rosmarinus* (Scrib. Larg.); Ar.: *iklîl al-gabal* اكلیل الجبل *iklîl gabalî* اكلیل جبلی *hasalbân* حاصلبان (Mod. Egypt. *Sickenb.*, *Schweinf.*); *qardmâtâ* قردماتا (Egypt, *Dâwûd*). For more Arabic names see *Issa* p. 175. Pers.: like Arabic, and *ghushtâr* غشتار (*Idrîsî* p. 18, l. 5); Turk. *biberiyé* ببریة (*Avni*); Eng.: rosemary; Fr.: *romarin*; Germ.: *Rosmarin*; Span.: *romero*.

1. Here BH cuts off some lines on other medicinal properties of the drug. They are to be found in IB (*Lecl.* I, p. 120).

32. **ÂNÎSÛN** آنیسون, *Anise* (*Pimpinella Anisum* L.). (*Lecl.* no. 159).

Diosc. III (56): The best is that which is bitter, fresh, with numerous seeds and of which no scales falls off like bran (rubbish in the sieve), which is of a strong smell, particularly that from Crete; after it comes the Egyptian.

Galen VI (X, 833): The most useful part of it is the seeds; they are sharp, bitter, diuretic, dissolvent confining (the bowels), aphrodisiac and a theriac (antidote) against the poisons of reptiles¹.

COMMENTARY.

The umbellifera *Pimpinella Anisum* L. s'original home was probably the Orient (Asia Minor, Egypt). It provides fruits as a drug (*Fructus Anisi vulgaris*) and oil (*Oleum Anisi*). As a spice it was already in use in Ancient Egypt.

Synonyms: Cr.: *ἄνισον* (*aneson*), *Diosc.* and *Theophr.*, *ἄνισον*, *Galen*; Lat.: *anisum* (Scrib., Larg., *Pliny*); Ar.: *ânîsûn* آنیسون, *jansûn* يانسون (Mod. Egypt, *Schweinf.* and Syria, *Bergg.*), *al-habba al-hilwa* الحبة الحلوة (Algeria, *Lecl.* I, 146); *râziyânag rūmî* رازیانج رومی (*Ibn Al-Gazzâr*, *Bîrûnî*, *Dawûd*); *râziyânag shâmî* رازیانج شامی (Vullers). Other Arabic names in *Issa* p. 140. Pers. and Turk.: *ânîsân* آنیسون; Pers. *bâdiyân rūmî* بادیان رومی,

1. The last words are not Galen's but Dioscurides'.

(Schlimmer, 463), *raghûn khâmîn* رعون خامين (Idrisî); Eng.: sweet cumin, anise; Fr.: anis vert; Germ. and Span.: anis.

33. ANDRÂSIYÛN أندراسيون *Sulphur-Wort* (Peucedanum officinale L.).

(Lecl. no. 176).

Diosc. III (78): *Πευκέδαρον* (*peukédanon*) is a plant with a thin stalk like that of the plant which is called *μάραθρον* (*máratheron*, fennel). It has near its root an abundant thick tuft; its flower is yellow and its root black and of an offensive smell, thick and full of moisture (sappy). It grows on mountains that are shaded by trees. The root is incised, while fresh, with a knife, its juice flows out and is put in the shade because its faculty grows weaker in the sunshine. He who collects this juice suffers from headache and dimness of sight if he does not (previously) anoint his nose with attar of roses and put some of it also on his head. The best of the sap of this plant comes from Sardonis (now Sardinia) and Samothrake; it is of an offensive smell, red, and stings the tongue. If rubbed into the head with vinegar it is helpful to *λήθαργος* (*lêthargos*), *φρενίτις* (*phrenîtis*), obstructions¹, epileptic fits, chronic headache and plegia.

1. Meaning obstructions of the vessels of the brain causing dizziness (*σχοιώματα skotômata*, Diosc. III, 78).

Galen VIII (XII, 99): The milk is more active than the root. (fol. 7 r); the juice heats powerfully and is useful for diseases of the chest and lungs, and for induration of the spleen.

COMMENTARY.

This plant is *Peucedanum officinale* L., an umbellifera containing a resinous gum. The root was in former centuries an officinal drug throughout Europe. The Arabic name *andrâsiyûn* is doubtless derived from a Greek name, perhaps from *ἀνδροσαίμων* (*andrósaimon*) which, however, designates another drug (St. John's wort). *IB* gives a much longer chapter on this drug, doubtless extracted from al-Ghâfiqî's original work, as he puts the drug under the letter *ya* ي according to its Spanish-Latin name *Yerba Tora* (*IB IV*, 208-9; *Lecl. III*, no. 2310).

Synonyms: Gr.: *πευκέδαρον*; Lat.: *peucedanum*; Ar., Pers. and Turk.: *andrâsiyûn* اندر اسلون, *bakhûr al-akrâd* بخور الاكراد; Pers. (moreover) *siyâh bâya* سیاه بویه; Turk. (moreover): *khinzîr râziyânasi* خنزیر رازیانه سی (Avni 463); Eng.: sulphur-wort, hog's fennel, maiden-weed; Fr.: *peucédane*, fenouil de porc; Germ.: *gemeiner Haarstrang*, Saufenchel.

34. ANGUDÂN أنجدان, *Silphium* (kind of *Ferula*).

(Lecl. no. 158).

Ibn 'Imrân: This is a plant the gum of which is the asafoetida (*hillit* حلتيت), and the root the *mahrûth* محروث; some of it is white and aromatic, and some black and stinking; it (the white) is called that of Sarakhs².

Al-Bakrî³: The black is stronger than the white and unfit as an aliment. It has a thick root from which leaves spread out on the ground and are contracted like a fist. They are composed of small leaves like those of the carrot resembling the pierced metallic sheets which are (fixed) under the rings of doors. From the leaves shoots out a tender stalk on the end of which is an umbel like that of the aneth (garden dill), except that it is larger. It is then succeeded by grains enclosed in thin, wide and lengthy sheaths of a disgusting smell.

Abû Hanîfa: It grows in the sands between Bust and the land of Qîqân⁴, and the inhabitants of those regions cook the grains of the asafoetida and eat it.

1. This word may designate a root having the form of a plough or a poker for stirring the fire (*mîhrâth* محرات). Bîrûnî, however, denies energetically that *mahrûth* is identical with *angudân*. He gives also several interesting quotations from old authors which are too long for repetition here.

2. A town in Khorâsân (Eastern Persia).

3. See our Introduction chap. I. no. 41.

4. In the text of *G* these names are totally mutilated, when *T* writes Sibta (Centa) and Qi'ân (Qairawân ?) so that the coast of North Africa might be meant. But as the author of

Ibn 'Abdûn¹: It is a plant like the lovage (*kâsham* كاشم, *Ligusticum levisticum* L.), growing in Babylonia. The green-grocer sells it amongst spices.

Diosc. III (80): Σίλφιον (*silphion*, i. e. the asafoetida plant) grows in Syria, Armenia and Media (*Mâh* ماه). Its stalk is called μάσπετον (*maspeton*), and resembles in shape the galbanum-plant². Its leaves are like those of the celery (*karafs* كرفس) and its seeds like those of *magýdaris* (μαγύδαρις) ³.

Galen VIII (XII, 123): The milk-juice of this plant

this quotation, Abû Hanîfa ad-Dînawarî, was a Persian, it is more likely that he referred to places near his country; we have therefore adopted the names which are transmitted by *IB* (I. 59, 1. 2). Bust was a town near Herât, and al-Qîqân a region near the western frontier of India (now Balûchistân).

1. Muhammad b. 'Abdûn was, according to Ibn Abî Usaibi'a (II. p. 46) a Hispano-Moorish physician who travelled in the Near East from 958 to 971 A.D. He lived for some time in Fustât فسطاط (Old Cairo), and in Baghdad where he became the disciple of the celebrated Muslim philosopher Abû Sulaimân as-Sigistânî أبو سليمان السجستاني. His literary production is nearly unknown, and it is therefore not possible to state wherefrom Gh. abstracted the quotation.

2. The names are mutilated in both MSS. It is to be read: "The *qinna*-plant, i. e. the *kalakh* الكلكخ or القنا". This is the translation of Diosc. III (80)'s *vágðhēx* (*nárthēx*), an undetermined kind of ferula. The Arabic names probably designate *Ferula galbaniflua* Boiss.

3. This is an erroneous translation from Diosc. III (80) who says that the seeds of the silphium are called *magýdaris*.

is of very hot faculty and so are its leaves and twigs; its roots are violently heating.

He says, moreover, in the second book: Asafoetida is useful for swelling of the uvula, just as the *παιονία* (*paionia*, peony) is useful for epileptic fits.

He (says) in the *Κατὰ Γένη* (*Katà Gêne*, i. e. Galen's work *De Compositione Medicamentorum per Genera*): The heating faculty of the opoponax (*gâwshîr* جاشير) is near to that of the asafoetida.

Diosc.: Its root is softening, drying, difficult of digestion and noxious to the bladder. Its gum is collected by making incisions into the root and the lower part of the stalk.

Ar-Râzî: The *mahrût* محروٲ (see above) is hot, dry, fortifying the liver and stomach and helpful to the digestion.

He says, moreover, in his book *On Aliments*: When macerated in vinegar it makes aliments more palatable and more digestive, and some of its (the drug's) acridity diminishes.

Diosc.: The best kind of asafoetida is that which is reddish, clear, resembling myrrh, of a strong and not disgusting flavour and a smell not unlike that of the leek, and which, when macerated, turns whitish. The asafoetida known as *Κυρηναϊκός* or that from Cyrene, when tasted, cools the body at once.

That known as *Μηδικός* (*Medikós*) meaning "the Med-

ian" i. e. that from Media, and that known as *Συριακός* (*Syriakós* or from Syria) both are of weaker strength than the Cyrenaic, and of worse smell. It is often adulterated before it is dried with *sagapenum* (gum of *Ferula persica*), flour of beans and gum-ammoniac. The stalk of this plant is called *σίλφιον* (*silphion*), its root *μαγύδαρις* (*magydaris*) (fol. 7 v.) and its leaves *μάσπετα* (*máspeta*). The strongest of all is the gum, next to it come the leaves and then the stalk.

Ar-Râzî: I found asafoetida efficient in the phlegmatic diseases of the nerves.

Hubaish¹: It is hot in the first class of the fourth degree, noxious to the liver and stomach, and, as to smell and heat, near to the marking-nut (fruit of *Semecarpus Anacardium* L.). Some people pretend that their habitants of Sind throw it into their rivers so that its smell may kill beavers and insects, thus saving their crops. The Armenians use it as a treatment for wounds from poisoned missiles thrown on them in times of war.

COMMENTARY.

The Cyrenaic *silphium* of Dioscurides is until now undetermined; some scholars have thought it might be the gum of *Ferula tingitana* L. (North Africa); but others have contradicted this identification. Viviani (*Sickenb. Arzn.* p. 21) thinks it to be his *Thapsia Silphium Viv.*

1. See our Introduction chap. I. no. 14.

The "Median silphium" corresponds without any doubt to the *asafoetida*, the gum of different Persian and Afghan species of *Ferula*, viz. *Ferula scorodosma* Benth. et Hook. (*F. Asa foetida* L.), *F. Narthex* Boiss.; *F. alliacea* Boiss.; *F. persica* Willd. etc. For literature and history see Flückiger 281, Dymock II (147 foll.), Loew III (452 foll.). The pretended use made by the inhabitants of Sind (now Panjâb) of the assafoetida for killing animals as recorded by Hubaish, is not mentioned by any modern author and may be legendary. The medicinal drug *Asafoetida* is still to-day in use as an antispasmodic. See also Schlimmer's long article on this drug (p. 56-8).

Synonyms: Gr.: *σίλφιον* (*silphion*); Lat.: *laserpitium*, *laser*, *Pliny*; Ar.: *angudân* انجدان (the plant), *mahrûth* محروث (the root), *hiltit*, *haltit* حلتيت (the gum), *hantit* حنثيت or *abû kabîr* أبو كبير (Mod. Egypt, *Schweinf.*), *al-kabîr* الكبير (Egypt, *Dâwûd*); Pers.: *anjudân*, *anjudhân* انجدان (*Abû Mansûr*), *anghûza-i-herâtî* انگوزه حراتی (*Schlimmer*); *angûdan* انگدان (*Idrîsî*) *angûja* انگوزه (*Steingass*); Turk.: *hiltit* حلتيت, *sheytân boqu* شيطان بوق (*Avni*); Many other names are given by Issa p. 82. Eng. *asafoetida*, foetid assa; Fr.: *ase fétide*; Germ.: *Stinkasant*; *Teufelsdreck*.

35. USHSHAQ أشنق, *Gum-Ammoniac* (from *Dorema ammoniacum* Don.).

(Lecl. no. 83).

Ushshaq أشنق is called also *ushshag* أشج, *washshag* وشج and *washshaq* وشق.

Diosc. III (84): Ἀμμωνιακόν (*Ammōniakón*) is the gum of a plant resembling in shape the galban-ferula (*kalakh* كاخ, i.e. *νάρθηξ* *nárthêx*). It grows in the land of Libya, further inland than Cyrene. The shrub is called ἀγασυλλίς (*agasyllis*). The choicest is that which has a beautiful colour, free from stones and wood, whose particles resemble a lump of frankincense as to purity and density, the odour of which is that of castor and the flower of which is bitter. The kind containing dust and stones is called "mixed".¹

It is brought from a place called Ammon, and is the juice of a shrub resembling the galban-ferula.

Galen VI (XI, 828): Its gum flows out of a straight stem². Its faculty is laxative; it heals induration of the spleen and resolves scrofulous glands.

COMMENTARY.

Gum-ammoniac (medicinal drug *Gummi-resina Ammoniacum*) is the resin of the umbellifera *Dorema Ammoniacum* Baill. or Don.. This drug probably came to the Greeks from the Persians, as the plant grows only in their land and in the neighbouring regions. Dr. Polak who lived a long time

1. Translation of Diosc. *φύραμα* (*phyrama*) i. e. mixed and kneaded.

2. This passage is missing in the Kuehn edition of Galen's *Simplicia*.

in Persia asserts that it is the produce of *Dorema Aucheri Boiss.* (Persien, vol. II, p. 280), and this is confirmed by *Schlimmer* (p. 30). But the drug as described by Dioscurides seems to be *Ferula tingitana L.* (Flückiger p. 289), The *Dorema*-gum was mostly used for plasters.

According to *Bîrûnî* the first Arabic-writing authors gave the name of *ushshaq* to the produce of different plants (poppy and others).

Synonyms: Gr.: Ἀμμωνιακόν (*Ammōniakōn*), θραύσμα (*thrausma*, *Diosc.*), φύραμα (*phyrama*, *Diosc.*); Lat.: hammoniacum, (*Pliny XII* and other places); Ar.: *ushshaq* اشق *ushshag* اشج, *wushshaq* وشق, *wushshag* وشج, *lazzâq adh-dhahab* لزازق الذهب (i.e. "cementing or soldering gold") (*Bîrûnî*, *Dâwûd*), *qannâ washq* قنا وشق, (Syria, *Dâwûd*), *katakh* كاخ (Egypt, *Dâwûd*), 'ilk al-katakh إلك الكاخ, (Egypt, *Issi*), *fasâkh* فسخ, (Mod. Egypt, *Ducros* p. 100), *samgh nûshâdirî kadludhâb* صمغ نوشادیری کذاب, (The Same), *ushshaq kadludhâb* اشق کذاب (i.e. false gum-ammoniac, the Same); Pers.: same names, moreover the plant is called in the province of Lûristân لورستان: *bilshîr* بلشیر, (*Schlimmer* p. 30); Turk.: *ushaq* اشق, *kelekh* کلخ, *châdir ushâgî* چادر اشافی (*Avni* 30); Eng.: gum-ammoniac; Fr.: gomme ammoniacque Germ.: Ammoniakgummi.

36. USHTURGHÂZ اشترغاز, Other *Ferula*-Root.
(Lecl. no. 84).

Ibn 'Abdûn¹: A root growing in Khorassân. It is cooked with meat as a condiment; its faculty is like that of *ferula asafoetida* (*angudân* انجدان; see no. 34).

Diosc. III (80, p. 97); Another *asafoetida* (*angudân* انجدان) which is said to grow in Libya. Its root resembles that of *asafoetida* save that it is thinner. It is sharp, soft and devoid of gum, and as active as σίλφιον (*silphion*).

Ar-Râzî: The *ushturgaz* اشترغاز even when macerated (in vinegar) is not free from heat (ing faculty), particularly when macerated for a long time; it is carminative and stimulates the appetite.

COMMENTARY.

Ushturghâz اشترغاز, also written *shuturghâz* شترغاز and (wrongly) *shuturghâr* شترغار, is a Persian word the meaning of which is "camel's food". Curiously enough the Persian medical and pharmacological dictionaries of *Abû Mansûr* and *Schlimmer* do not know this Persian name. But it is probably identical with *Schlimmer's Ferula asa dulcis* (p. 55-56) which he calls also *angudân at-tibb* انجدان الطب. The learned *Vullers* in his great dictionary identifies *ushturghâz* with the above-mentioned *laserpitium*, a kind of *asafoetida*, and with another plant the roots of which are used as pickles in

1. See note 1 on p. 113.

vinegar. *Freytag* identifies this latter plant with *horminum* or *Salvia silvestris*, which is probably wrong. *Birûnî* and *Harawî*, who were Persians, say: *ushturghâz* is the root of the Khorassanian ferula اشتراغار هو أصل الانجدان الحراساني. *Ibn Sîna* (ed. Bulâq I, 253) names the plant but does not give its description. The Latin translator, *Plempius* (II, 45) translates it by *Magydaris libyca*, evidently based on *Dioscurides*. IB (no. 84), and other Arabic authors translate the Persian name with "camel-thorn", confounding *shutur-ghâz* اشتراغاز with *shutur-khâr* شترخار (i. e. *Alhagi Maurorum*, Camel's thorn). Any how it must be one of the numerous Persian kinds of *Ferula*. See *Loew* III, 455.

Synonyms: Gr.: *ἔριχα μαγύδαρις*; Lat.: *laserpitium*; Ar.: *kâsham* كاشم, (*Idrîsî* p. 41); Pers.: *ushturghâz* اشتراغاز, *shuturghâz* شترغاز.

37. ANZARÛT انزروت, *Persian Gum* (*Sarcocolla*). (Lecl. no. 171).

Ibn Sînâ: It is the gum of a thorny shrub.

Diosc. III *Σαρκοκόλλα* (*sarkokôlla*)¹ is the gum of a shrub in Persia, resembling frankincense, with small lumps; its gum is bitter.

Galen VIII (XII, 118): It heals and cicatrizes wounds.

1. The text of *Diosc.* reads *σαρκοκόλλα* (*sarkokôlla*).

Another Author: When drunk without any corrective, it is deadly. It causes baldness particularly to people of mature age, according to the dose in which it is drunk.

COMMENTARY.

The *anzarût*, *sarcocolla*, still largely used and sold in the East, e.g., in the drug bazaars of Cairo, is a drug which is hardly known in Europe at the present time. It has not been possible to state in a definite manner, the plant from which this gum is extracted. *Schlimmer* (425) names *Penna mucronata* L., *Dragend.* (343), moreover, *P. Sarcocolla* L. and *P. squamosa* L., when *Dymock* proves in *Pharm. Journ. and Transactions* 1879 that the Indian drug at least, is the product of an *Astragalus* (*leguminosa*) which he calls *Astragalus Sarcocolla* Dym. (see also *Dymock* I, 476 foll.). There is also a "false *sarcocolla*" produced by the composita *Microrhynchus spinosus* Benth. (*Dragend.* 692), of Afghanistan. The drug is still much in use in the Orient for eye-diseases (see *Ducros* p. 11).

Synonyms: Gr.: *σαρκοκόλλα* (*sarkokôlla*); Lat.: *sarcocolla*, *Pliny*; Ar.: *anzarût* انزروت, انزروت, انزروت, *kuhl fârisî* كحل فارسی (*Dâwûd*), *kuhl kirmânî* كحل کرمانی (*Idrîsî*); Pers. and Turk.: *anzarût* انزروت; Pers. (moreover): *tashm* تاشم (*Idrîsî* p. 8)¹,

1. It is derived from Persian *tshashm* چشم i. e. eye or eye-salve; it is still in use in the Near East to day as *shishm* ششم (a name for the seeds of *Cassia Absus* L. or any eye-remedy).

kanjubâ كجبا (*Idrîsî*), *kanjudha* كجذة (*Birûnî* and *Idrîsî*) or *kanjudak* كجذك (*Steingass*), and *zahr tshashm* زهر چشم (*Dâwûd*), which must read *pâzahr-i-tshashm* بازهر چشم, i.e. antidote for the eye, as *Dâwûd* gives the Arabic translation: *tiryâq al-'ain* ترياق العين.

38. ÂLÛSUN آلوسن, *Alysson*.

(Lecl. no. 1).

Diosc. III (91): It is a coarse plant used as fuel¹, with a single stem. It has fruits at the origin of the leaves, of the form of lupin (*turmus* ترمس) composed of two layers with seeds not inclined to be wide (somewhat narrow). It grows in mountainous places and rugged regions. It is believed that it heals the bite of rabid dogs and that, when suspended in houses, it preserves the health of their inmates. Drinking of its decoction soothes the afebrile cold, and it acts in the same manner when held in the hand and looked at².

Galen VI (XI, 823): It is called by this name because it is useful against the bite of the rabid dog by a specific property of its whole substance. Its faculty is moderately drying, resolvent and cleansing.

1. Translation of the Greek *φρυγάνιον* (*phrygânion*).

2. This is an addition to Dioscurides' Greek text.

He (Galen) says in the *De Antidotis* copying Damocrates¹: (fol. 8 r) This plant resembles the hore-hound (*marrubium*, Ar.: *frâsiyûn* فراسيون *πράσιον*) save that it is coarser and thornier all round. Its thorns grow round with a dark red colour like that of the liver. This drug must be collected at the time of the rising of Sirius (in the Dog-star days, i.e. in the hottest time of the year), dried, pounded, sieved and stored. It is to be administered against the bite of rabid dogs in the dose of one spoonful to four and a half ounces of honey-water.

Author: These qualities do not correspond to the description given by Dioscurides. We saw this plant as described by Galen according to Damocrates. On the other hand that which is mentioned by Dioscurides is a plant called at home (in Spain) *al-hâra* الهارة and also *al-qâra* القارة². Its description does not correspond in all parts to that given by Dioscurides. It is a plant the branches of which are big, and spread out from one root. They have leaves which are a little larger than those of the marjoram. They

1. The Arabic text reads Demokrates ديموقراطيس. Damocrates was a Greek physician who described many compound remedies and antidotes in verse. The above quotation is to be found in *De Antidotis II* under the name of Antoninus of Cos (Lecl. I, 7).

2. It is written in both MSS. with a *fâ* ف, but IB says (I, 4, 1.8) expressly that it is written with the letter *qâf* ق, i.e. *al-qâra* القارة. IB, at the same time, contests al-Ghâfiqî's opinion and identifies *qâra* with the Greek *stachys* (στάχυς, woundwort).

grow in thick tufts on the twigs that curve backwards, and incline downwards with a hidden slit. Their colour, and that of the branches is whitish, and at every leaf, there are grains of the size of coriander-seeds, white with downy hairs on them and containing black grains of the size of grapes. This plant discharges the black bile, strengthens the heart and is useful for the bite of rabid dogs.

There is still another plant very much resembling the aneth as to stem, leaves and smell. It grows in thin and stony soil and has a long root like a long turnip or a carrot. Its taste is sweet with much acidity. A dose of two drachms of the bark-fibres (*lihâ'* لِهَاءِ) of this plant mixed with fresh milk causes a person, who is bitten by a rabid dog, to vomit, and cures him¹, even if he be already hydrophobic and dying.

There is another plant with branches resembling those of *Daphne Gnidium* L. (*al-mathnân* المَثْنَان). Its leaves are long, narrow with sharp edges, thick, green, very smooth and with thickened ends. Its flower is bell-shaped, of reddish-grey colour, hanging downwards and strongly bitter. The nomads of our deserts take a little of the juice of the leaves and drink it with oil, which makes them vomit very violently.

1. According to IB (p. 4), who has the unabridged text, al-Ghâfiqî advised the use of the expressed juice of the inner bark of the root,

It is useful for the bite of rabid dogs and for leprosy; it is a strong remedy and unreliable if one is not careful in using it. I believe this plant to be the *karâth* كَرَاث (*Daphne Tartonraira* L.) of Abû Hanîfa¹.

COMMENTARY.

Botanists have found great difficulty in identifying the above-described plants. It is uncertain what may have been the *alysson* of Dioscurides. Its name has been given to the crucifera *Alyssum saxatile* L., a mountain plant of Southern Europe. The description, however, better suits *Farsetia clypeata* R. Br., another crucifera (Dodonaeus, *Historia Stirpium* 1550); see Loew I, 474. *Idrîsî* (no. 67) only repeats the description of Dioscurides. As to the plants described by al-Ghâfiqî it is not possible to have them identified except by a professional botanist particularly acquainted with the flora of the Spanish mountains. One of the plants may be *Thymelaea Tartonraira* All., the other – as suggested by IB – one of the kinds of *Stachys* (*Stachys germanica* L. or *St. recta* L.), Issa (p. 174). *Sickenb.* suggests (Arzn. p. 8) *Marrubium Alysson* L.

Synonyms: From the Greek ἄλυσσον (*álysson*) the meaning of which is “protecting against canine madness”

1. This name *karâth* كَرَاث is not to be confounded with the similarly spelt *kurrâth* or *lœk*. Al-Ghâfiqî speaks, later on, more about this plant to which he gives also the name of '*ushbat as-sibâ'* عَشْبَةُ السِّبَاع (i. e. “lions' herb”).

is derived an Arabic name *shagarat al-kalb* شجرة الكلب “dog’s herb” *Dragend.* (p. 259, last line), *hashîshat al-lagât* الحشيشة اللاجاة, IB¹; Pers.: *azdashit* ازدشت (*Dâwûd*; doubtful, as not confirmed by our Persian sources); Eng.: madwort; Fr.: alysse.

39. ASQLIBIYÂS أسقليياس, *Asclepias*.

(Lecl. X, no 66).

Hunain called it in the book of Galen *al-qanâbir*².

Diosc. III: A plant with long branches on which are oblong leaves like those of *κισσός* (*kissós*, ivy) as to form, with many thin roots and flowers which are heavy in odour; its seeds are like those of *πελεκίνος* (*pelekinos*, vetch)³ and it grows on the mountains. Its roots, drunk in wine, are useful against colic and the bites of venomous reptiles.

Galen VI (XI, 840): I have no knowledge of this herb and have never experimented with it.

COMMENTARY.

This plant was identified with *Asclepias Vincetoxicum* L.

1. Issa (p. II) identifies the plant with *Alysson saxatile* L. and gives several other Arabic names. This plant is called in English: gold-basket or yellow alison, in French: alysse jaune, corbeille d’or.

2. This book is Galen’s treatise *On Simple Drugs* translated by Hunain. The latter rendered *ἀσκληπιὰς* by *qanâbir*, a translation against which IB writes in strong terms (I, p. 26 last lines; Lecl. I, p. 61). It is very probable that this passage is due to al-Ghâfiqî and only omitted by BH.

3. *Coronilla securidaca* L. (Borendes 327).

but has no fragrant roots. So Fraas identified it with a kind called by him *Asclepias Dioscuridis* which he found on the mountains of Euboea (Greece). See *Loew* I, 281 foll.

Al-Idrîsî (I p. 31), however, says that the Latin name of the plant is *qanâbarî* قنابرى reminiscent of Greek *κιννάβαρι*. He gives a more detailed description of the plant, not in accordance with that of Dioscurides. He may be speaking about another plant as he finds *asclepias* in *Diosc. IV* instead of III.

Synonyms: Gr.: *ἀσκληπιὰς* (*asklepiás*); Ar.: *qâmi’ as-simm* قامع السم (i.e. checker of poison), *Sharaf*; Pers.: no name¹ Turk.: *qâhîr-i-sumûm* قاهر سموم (i.e. conquering poisons), *quduz otu* قودوز اوتی (‘*Avni* and *Samy*); Eng.: *asclepias*; Fr.: *asclepiade*; Germ.: *Schwalbenwurz*.

40. AMBRÛSIYÂ امبروسيا, *Sea-Ambrosia* (*Ambrosia maritima* L.).

It is the *bilinjâshq* بلنجاشق².

1. Al-Idrîsî gives in the article *Asclepias* the name *barghasht* برغشت; *Steingass’s* Dictionary knows a plant *barghasht*, a certain wild pot-herb resembling spinach and growing on the banks of rivers. This description does not correspond with that of Dioscurides’ *asclepias*.

2. The text of T and G reads *bilinjâshq* بلنجاشق, a copyist’s error. *Bilingasf* or *Biringasf* is the southern-wood, a kind of *artemisia* (*Artemisia vulgaris* L.). The above statement is erroneous, as *ambrosia* and *artemisia* are two different kinds of plants; it may be a copyist’s interpolation.

Diosc. III (114): It is a *θάμνος* (*thámnos*, shrub) with many branches, about three spans high. Its leaves grow from the origin of the stem and from the root; its twigs are full of seeds¹ resembling bunches of grapes before they ripen. Its smell is like that of the rue (*sadhâb* سذاب) and its roots are thin and about two spans long. The inhabitants of Cappadocia use it for making wreaths.

Galen VI (XI, 824): When used for cataplasms it is astringent and prevents excretions from curdling.

COMMENTARY.

The *ἀμβροσία* of Diosc. is generally identified with *Ambrosia maritima* L., a composita.

Synonyms: Gr.: *ἀμβροσία*; Lat.: *ambrosia* (Pliny, who confounds it with several other plants); Ar.: *damsîs* دمسيس (IB), *damsîsa* دمسيسة, *ambrûsiya* امبروسيا (IB); Pers.: *amrûsira* امروسيرة Steingass; Turk.: 'anbariye عنبريه, *yaila* (yailé) *chi-cheyi* چيچي (يايلا); Eng.: sea-ambrosia; Fr.: *ambrosie*, *absinthe batarde*; Germ.: *Ambrosia*.

41. AWNÂNTHÎ أوانثي, *Oenanthe*² (*Spiraea filipendula* L.).

1. Thus reads the text of Dioscurides. He understands by "seeds" the small blossom-buds.

2. Gh. and his compiler BH here show their better knowledge of the language by exactly transliterating in Arabic the Greek word *οἰνάνθη* (*oinanthe*), whilst IB (no 136) disfigures the name to *allini* الابني. The same false reading *alaini* is found in *Idrisî* (p. 26, nn. 42), so that it must be an early copyist's blunder.

(Lecl. no. 136).

Diosc. III (120): It is a plant with leaves like those of the carrot, white flowers and a thick stem about one span high. Its fruit is like that of orach (*sarmaq* سمرق, *ἀνδοράφαξις*, *ἀνδοράφαξος*, *Atriplex hortensis*). Its root is enormous with many round bulbs. It grows amongst rocks. Its fruit, stem and leaves are drunk with the wine called *οἰνόμελι* (*oinómeli*, a kind of mead) to expel the placenta and to clarify the urine.

COMMENTARY.

Theophrastus knows two kinds of *oenanthe*, one of which seems to be identical with that of Dioscurides. It is identified by most of the botanists with *Pedicularis tuberosa* L., a scrophulariaceae, but by *Fraas* and *Littre* with *Spiraea filipendula* L. (drop-wort), a rosacea.

Synonyms of the latter plant: Gr.: *οἰνάνθη* (*oinánthê*); Lat. *oenanthe*, (*vitis labruscae uva*), *Pliny*; Ar.: *al-qandûl* القندول, *Berggr.*, Persian¹: *rish-baz* ريش باز (*Naficy*); Turk.: *qandûl* قندول, *Avni*, *erketsh saqali* أرکچ صقالی; Eng.: drop-wort; Fr.: *filipen-*

2. *Al-Idrisî* gives the Persian name *ardasht* or *azdasht* اردشت ازدشت which does not exist in any dictionary - the Syriac term *matrâ-batrâ* مترابتر and the Berber term *mâkashfûl* ماكشفال. *Issa* (p. 127) calls the plant *Oenanthe* L. and gives the Algerian-Arabic name *mashfil* مشفيل.

dule; Germ.: knollige Spierstaude, roter Steinbrechwurz, Erdeichel.

42. ÎMÂRUQÂLÎS أياروقالس, *Yellow Day-Lily*

(*Hemerocallis fulva* and *flava* L.).

(Lecl. no. 209).

Diosc. III (122): It is also called *ἡμεροκατάλλακτον* (*hemerokatállakton*). Its leaves and stem are like those of the lily, but they are leek-coloured. It has three or four blossoms of an intense yellow colour and a root like that of the onion called *βολβός* (*bolbós*, *Pancratium maritimum*?) though it is bigger.

Galen VI (XI, 884): Its root is like that of the lily as to appearance and faculty. Its use is to cause hot swellings of the eye and breast (*mamma*) to subside. It is also used for burns in the form of applications¹.

COMMENTARY.

The lily described by Theophrastus as *ἡμεροκαλλῆς* (*hemerokallés*) is the Martagon-lily and differs from the *ἡμεροκαλλίς* (*hemerokallis*) of Diosc. The latter plant may be *Lilium bulbiferum* (according to Mathiolus) or *Hemerocallis fulva* L. The description of the latter is well in accordance with that

1. This latter passage has been abstracted from Dioscorides; it is not found in Galen's text. Probably a copyist's blunder corrected by IB.

given by Diosc. IB (no. 290) says that the yellow lily was shown to him by a notable of Cairo who had brought it from Syria. *Sickenb.* (Plantes p. 11; *Arz.* o. 25) says that Schweinfurth discovered plants of the *Hemerocallis fulva* in the old Wakf-Gardens of Cairo though they had disappeared from the modern Egyptian gardens. He thinks that they may date from the time of the successors of Saladin when the Qâdi al-Fâdil introduced them into Egypt from Syria (beginning of the XIIIth. cent. A.D.).

Synonyms for *Hemerocallis fulva* and *flava* L.: *Ar.*: *sawsan asfar* سوسن أصفر, *sawsan khatâ'i* سوسن خطائي, *Issa*; *Pers.*: and *Turk.*: same names; *Eng.*: yellow day-lily, lemon-lily; *Fr.*: *hemerocalle*, *lys jaune*; *Germ.*: *gelbe Tagililie*.

43. AIDHUSÂRÛN أيدسارون¹, *Hedysaron*, *Axe-Weed* (*Securigera Coronilla* D.C.).

(Lecl. no. 136).

Diosc. III (130): It is called by the druggists *πελεκῖνος* (*pelekinos*). It is a *θάμνος* (*thamnos*, shrub) with small leaves like those of the chick-pea, and husks, (*ghuluf* غلف, capsules *λυβοί*) resembling in form those of the Syrian carob. There are red seeds in them resembling two-edged axes, of bitter

1. Here again Gh. gives the correct reading where IB (no. 163) disfigures the name to *andûsârûn* اندوسارون adopting an early copyist's error.

taste. They are good for the stomach as a drink.

Galen VI (XI, 883): It grows amongst wheat and barley. It is useful for obstructions of the viscera and, when used in the form of pessaries, prevents pregnancy¹.

COMMENTARY.

This plant was also known to Theophrastus under the name *πελεκίνος* (*pelekinos*). It is probably the South-European legumiosa *Securigera Coronilla* D. C., axe-weed, an emetic. (*Berendes* p. 349), and not one of the kinds of *Hedysarum* for which *Issa* (p. 91) gives Arabic names.

Synonyms: Gr.: *ἡδύσαρον* (*hêdysaron*), *πελεκίνος* (*pelekînos*); Lat.: *pelecinus*, *Pliny*; Ar.; Pers. and Turk.: no term;² Eng.: axe weed; Germ.: schwertförmige Kronwicke.

44. AWNÛSMÂ ³أونوسما, *Onosma*.

(Lecl. no. 193).

Diosc. III (131): It is also called *δομάς* (*osmâs*), *φλονίτις* (*phlonîtis*) and *ὄνωνις* (*ônônis*). Its leaves are like those of

1. These last assertions are equally given by Dioscurides, and are not found in Galen's text.

2. *Issa* (p. 91) gives, as terms in Arabic, *al-fâ's* الفأس and *adas murr* عدس مر (i.e. "bitter lentils").

3. Misspelt in *T*, *Q* and *IB* into *onoma* أونوما.

ἀνχουσα (*anchusa* i.e. alkanet, *Alkanna tinctoria* Tausch.), oblong, soft, four fingers long, and about one finger wide. They spread out on the ground. It has neither stem, fruit nor flowers, and the root is thin, weak, long and blood-red in colour. It grows in rugged places. It expels the foetus during labour.

Galen VIII (XII, 89): Its substance is hot, sharp and bitter. Taken with wine it kills embryos.

COMMENTARY.

Most of the botanists follow now *Fraus* who identifies the *ὄνωσμα* of Diosc. with the boraginacea *Onosma echiioides* L. In India it is used as a substitute for borage (*Dymock* II 524). *Issa* (p. 128) gives some Arabic synonyms.

45. IMIYÛNÎTÎS ¹أيميونيطيس, *Milt-Waste*, (Hemionitis). (Lecl. no. 210).

Diosc. III: Some people call it spleen-wort (*ατ-τuhâli* الطحالى, *σπλήγιον*, *splenion*). Its leaves resemble those of the aracea (*λίφ* لوف)¹ *δρακόντιον* (*drakôntion*, dragon's wort, *Arum Dracunculus* L.) and are semi-lunar in shape. It has many roots but neither stem, seeds nor flowers. It grows amongst rocks.

1. In the text of *T* and *G* *lauz* لوز (almond); this is a copyist's blunder that we have corrected.

The taste is astringent and, when drunk with vinegar, it resolves the splcen (i. e. the excessive growth of the splcen).

COMMENTARY.

Most of the botanists agree to see in Diosc.'s *ἡμιόνις* the polypodiacea *Scolopendrium Hemionitis* Sw. (milt-waste, eckiger Zungenfarn). The *ἡμιόνιον* (*hêmionion*) of Theophr. seems to be identical.

46. ANDRÛSÂQÂS أندروساقس, *Androsakes*¹.

(Lecl. no. 165).

Diosc. III (133): It is a plant that grows on the shores of Syria, renewing its growth every year. It is white, has thin twigs, is of bitter and sharp flavour and has no leaves; on its tips there is a sheath (*ghilâf* غلاف) containing seeds. Two drachms of it, drunk with wine, are strongly diuretic to ascitic people. It is useful in gout in the form of a cataplasm

Galen VI (XI, 830): Like the sayings of Dioscurides².

COMMENTARY.

The European botanists early recognised that the *and-*

1. In IB (I, p. 62), disfigured to *andrûtâfis* اندروطافيس, *Dâwûd*: *andrûtâlîs* اندروطاليس.

2. Probably abridged by BH.

rosakes of Diosc. is not a plant, but a marine zoophyte, probably the *Tubularia Acetabulum* (according to *Sprengel*), a kind of hydroid polype. IB (I, 62, 1, 16) gives it the Arabic names of *mallâh* ملاح, *kasmâ* كسما and *kamlag* كملج. *Idrîsi* (I, 28) gives the Persian name *kulkh* كلخ (*Steingass*: "a kind of herb"). *Dâwûd* gives the Persian name *kânih* کانه. The name of *Androsaces* Tourn. has been transferred, however, to a group of plants belonging to the species of the primulaceae. For this group the above-mentioned Arabic names are in use; some others are given by *Issa* (p. 16-17).

47. ANTHÛLÎS أثوليس, *Anthyllis* (uncertain).

(Lecl. no. 157).

Diosc. III (136): There are two kinds of this plant: one has soft leaves like those of lentils, perpendicular branches about one span in length and a thin small root. It grows in swampy and in sunny places, and is of salty taste.

The other kind (**fol. 9 r**) has the leaves and branches of the *χαμαίπιτυς* (*chamaîpitys*, ground-pine), save that they are more downy and shorter, in length. Its blossom is purple-red and of a very heavy smell. It cures, when drunk, epilepsy, dysuria and pains in the kidneys.

Galen VI (XI, 833): Both of them heal ulcers.

COMMENTARY.

The first kind of Diosc.'s *ἀνθυλλίς* (*anthyllis*) had been

already determined by Prosper Alpinus (*De Plantis Exoticis*, Venice 1629) as the convolvulacea *Cressa cretica* L. See Loew I, 452 ("Salzwinde").

As to the second kind, it is not determined with certainty. The old botanists (e. g. *Clusius*) took it for *Ajuga Iva* Schreb. (sec Loew II, 71 72), whilst Fraas proposed to identify it with *Frankenia hirsuta* (Berendes 352). *Idrîsî* (no. 52 p. 28) gives *anthillishun* انثلشن as the Modern Greek name and as the Arabic one *az-zahra* الزهرة, which simply means "the flower". His description absolutely corresponds to Dioscurides. These names probably refer to the leguminosa *Ebenus creticus* L. which provides a kind of red ebony. Issa (p. 73) gives the name of *zahra* to this plant.

48. UQHUWÂN أفحوان, *Fever-Few* (*Chrysanthemum Parthenium* Pers.)¹.

(Lecl. no. 121).

Diosc. III (138): Παρθένιον (*parthénion*)—some people call it ἀμάρικον (*amárikon*)—has leaves resembling those of coriander and a white flower with a yellow centre, of heavy odour and bitter flavour. When drunk — mixed with *oxymel* (*sikangabin* سكرنجين, i. e. honey with vinegar) or

with salt in the manner in which ἐπίθνυμον (flax-weed, *Cuscuta Epithymum*) is taken, it causes the discharge of phlegm and black bile, and becomes useful against asthma.

Galen IV (XI, 823): It is hot in the third, and dry in the second degree.

Ibn Mâsa¹: It is soporific and lethargic when inhaled. It is also diuretic: and when used as a pessary (*farzaga* فرزجة, πεσοάριον) is emmenagogue.

COMMENTARY.

It is one of the kinds of *Matricaria*, very propably *M. Parthenium* L. (i. e. *Crysanthemum Parthenium* Pers. or *Pyrethrum Parthenium* Smith). The different kinds of camomile were not clearly distinguished by ancient and medieval botanists. See the very detailed paragraph of Loew (III, 375-8) on *Anthemis*. *Idrîsî* distinguishes three kinds; *bâbûnag* بابونج, white and yellow *uqhuwân* افحوان.

Synonyms: Gr.: παρθένιον (*parthénion*), ἀμάρικον (*amárikon*), λευκάνθεμον (*leukánthemon*), *Diosc.*; Lat.: *parthenium*, *perdicium*, *linozostis* etc., *Pliny*; Ar.: *uqhuwân* افحوان, *al-aqâhî* الافاحى (*Idrîsî*), *bâbûnag* بابونج (IB), *karkâsh* كركاش (Medieval Egypt, erroneously acc. to IB), *shâgarat Maryam* شجرة مريم

1. This paragraph is more detailed and full of personal remarks in IB (Lecl. no. 121) *Idrîsî* also gives a longer section on this plant

1. See our Introduction chap. I. no 17.

(Andalusia, IB), *kâfûriyya* كافورية (North Africa, IB), *shagarat al-kâfûr* شجرة الكافور (Môsul, IB), *ar'ûl* ارعول (? acc. to *Schweinf.* p. 13, in Modern Egypt), *ahdâq al-maradâ* احداق المرضي (Vullers I, 116), *khubz al-ghurâb* خبز الغراب (ibid.), *rigl ad-dugâga* رجل الدجاجة (*Dâwûd*); *kâfûriyya* كافورية (*Dâwûd*), *shagarat Maryam* شجرة مريم (Maghrib, *Dâwûd*); Pers.: *uqhuwân* اقحوان (Vullers I, 116); *bâbûne* بابونة, *kâfûrî* كافورى (Vullers 777); *kâfûr-isparam* كافور بوى (*Abû Mansûr*, *Achundow* p. 168), *kâfur-buy* كافور اسبرم (*Idrîsî* p. 22); Türk. 'âdi *papatiye* عادی پاپاتیه ('Avni 371); Eng.: fever-few, bachelor's buttons; Fr.: matricaire, espargoutte; Germ: Mutterkraut, Mutterkamille.

Birûnî's paragraph on *uqhuwân* is too long to be reproduced here; he quotes abstracts from early Arabic poems in which the name of the plant is mentioned.

Idrîsî (p. 22) who gave many synonyms for each plant, cites the Modern Greek word *hamamîdî* حميدى, probably mutilated *χαμομήλι* (*chamomēli*); and the Berber name *âlûshan* آلوشن. The Indian and Syriac names are mutilated.

Dâwûd says that the kind known in Egypt by the name *urbîyân* أريان is the subject of an old Coptic superstition: if it is cut with a golden knife on the nineteenth day of the Aries and carried by a person, it is believed he shall not lose his gold.

Issa gives the name of *uqhuwân* to three different compositae: *Anthemis cotula* L. (p. 18), *Chrysanthemum Parthenium* (p. 48) and *Matricaria chamomilla* L. (p. 115) for each of which exist numerous other Arabic names.

49. **ÂNÂGHÛRÛN** أناغورون, *Bean-Trefoil* (*Anagyris foetida* L.). (Lecl. no. 156: *Ânâghûris* أناغورس).

'*Ânâgvor*¹ is the "carob of pigs" (*kharnûb al-khinzîr* خرنوب الخنزير); it is called *ayâghîrân* اياغيران, but this is a false reading, and must be spelt *ânâgvros* (*anagyris* or *anagyros*).

Diosc. III (150): It is a *θάμνος* (*thámnos*, shrub) the leaves and branches of which resemble the plant called *ἄγνος* *âgnos* (*Vitex Agnus castus*, chaste-tree). It has a very heavy smell, blossoms like those of the cabbage and fruits in oblong sheaths. The form of the fruit is that of a kidney, and its colour is variegated: it becomes hard about the season when grapes ripen. The juice of its root is dissolvent and maturing, and its fruit is violently emetic.

Galen VI (XI, 829): This is a plant of the shrub kind, fetid in smell, hot and resolvent. It atrophies soft swellings, and its seeds stop vomiting.

COMMENTARY.

The *ânâgvros* or *ânâgvrs* (*anagyros* or *anagyris*) of the Greeks corresponds to the papilionacea *Anagyris foetida* L. It is a shrub with large yellow flowers, common in the Mediterranean region.

1. So spelt in the text of T and G; but the reading of this name is uncertain also in the original Greek text of Dioscorides (see ed. Wellmann I. p. 158).

Synonyms: Gr.: ἀράγγος, ἀράγγις, ἄκοπος (*ákoros*), *Diosc.*; Lat.: same names, *Pliny*; Ar.: *kharnûb al-khinzîr* خرنوب الخنزير, Gh., *habb al-kilâ* حب الكلى (Medieval Egypt, IB), *kharnûb al-kilâb* خرنوب الكلاب (i. e. "dogs' carob", IB). For many other Modern Arabic names see *Loew* (II, 418-19), and *Issa* (p. 14-15). Pers. and Turk.: *kharnûb-i-khanâzîr* خرنوب خنازير ('*Avni*); Eng.: bean trefoil, bean-clover; Fr.: *anagyre*, *bois puant*; Germ.: *gemeiner Stinkstrauch*.

50. ÂMLÎLÛS آمليوس, *Barren Privet* (*Rhamnus alaternus* L.).

(Lecl. no. 5).

Amlilis is a Berber name¹. It is a tree, taller than a man and spread out. Its leaves are like those of green myrtle; it is smooth and has red fruits of the size of the grains of *Pistacia lentiseus* (*dirw* ضرور). When ripe they become black and smooth to the touch. The wood is hard inside, whitish-yellow and shining, with a slight reddishness. Some people know it by the name of *as-sufairâ* الصفيراء. The maceration (*naqî'* نقيع) of the fibres of its root is laxative, strengthens the liver and spleen and removes their obstructions. It causes jaundice, when cooked with meat and the broth thereof is drunk.

1. IB (I, p. 6) reads *aamlilis* آملييس.

COMMENTARY.

Lecl. (I, p. 12) has found out that this plant is *Rhamnus alaternus* L.. It bears, indeed to this day, the Berber name *amlilis* ملبليس (*Schweinf.* 223), the Arabic one is *sfêrâ'*, *sofirâ'* صفراء and others similar (*Loew* III, 141). IB adds to the above given description of Gh. another given by his teacher Abu'l 'Abbâs an-Nabâtî.

Synonyms: Berber: *âmlilis* آملييس, *âmlilûs* آمليوس; Ar.: *sufairâ* صفيراء, 'ûd al-qîsa عود القيسة (*Issa* p. 155); *zafrîn* زفرين (Syria, *Issa*), 'ûd al-khair عود الخير (*Issa*); Eng.: *alaternus*, *barren privet*; Fr.: *alaterne*, *nerprun*, *bourg-épine*; Germ.: *immergrüner Kreuzdorn*.

51. AWNÛBRÛKHÎS أونوبروخيس, *Esparcet* (*Onobrychis*).

(Lecl. no. 192).

Diosc. III (153): It is a plant the leaves of which are like those of small lentils, but a little longer. It has a stem one span high. The flowers are bright red, and the root is small. It grows in uninhabited places.

Galen VIII (XII, 89): Applied fresh as a cataplasm it dries abscesses. When dried and drunk in wine it is good for dysuria, and when triturated with oil and smeared over the body, it acts as a diaphoretic.

COMMENTARY.

It is, according to *Sprengel*, the papilionacea *Onobrychis sativa* Lam., and according to Fraas, *Onobrychis caput galli* L. (*crista galli* Lam.). Anyhow it is a kind of esparcet. Its seeds are still used as a diuretic.

Synonyms: Gr.: *ὀνοβρυχίς* (*onobrychis*); Ar.: *silla* سلة and *gulbân al-hayya* جلبان الحية (Lecl. no. 192, according to Hunain's Arabic Diosc.), *sinnat al-'agâz* سنة العجوز (Loew II, 520); Pers.: no proper name, (see *Schlimmer* p. 309, *Hedysarum onobrychis*); Turk.: *hashîshât-i-mu'azziza* حشيشات معززة, *giyâh-i-mu'azziza* گیاه معززة, 'Avni (p. 538); Eng.: esparcet, honey-suckle, French grass; Fr.: esparcette, sainfoin; Germ.: Wickenklee, türkischer Klee, Esparsette.

52. AFÎMÎDIYÛN أفيميديون, *Epimedium*.

(Lecl. no. 117).

Diosc. IV (19): Its stem is small and its leaves are like those of *κισσός* (*kissós*, ivy); they number about ten or twelve. It has no fruit (or flower)¹, but has thin black roots of a heavy smell and no taste. It grows in watery places. Its leaves, mixed with oil, and applied to the breasts prevent their over-

1. These words are missing in T and G, but are restored by us according to the texts of Diosc. and IB.

growth. Five drachms of it, if drunk by a woman after her menses, prevent her conception.

Galen VI (XI, 876): It is slightly cooling, and is said to promote sterility when drunk.

COMMENTARY.

The old European botanists agreed to see in the *ἐπιμήδιον* of *Diosc.* the berberidea *Epimedium alpinum* L. *Berendes* (p. 376) remarks that this identification does not agree with the habitat of the plant. A note in the Arabic translation of *Diosc.* confirms, the fact that the plant *afîmîdiûn* grows in water (Lecl. no. 117). Other botanists proposed the ophioglossacea *Botrychium Lunaria* Sw. or *Marsilea quadri-folia* (Littre); but their character is again not in accordance with *Diosc.*'s description. Thus the question remains unsettled.

The Greek name *ἐπιμήδιον* is rendered in Latin, by *Pliny*, as *epimedium*. The *Epimedium alpinum* bears the English names barren-wort and bishop's hat; Fr.: *épimède des Alpes*, *chapeau d'évêque*; Germ: *Sockenblume*, *Bischofsmütze*.

Issa gives (p. 76) the Arabic name *hurfat al-barriyya* حرفة البرية.

53. ÂKHIYÛN أخيون, *Viper's Bugloss* (*Echium rubrum* Jacq.).

(Lecl. no. 24).

This is the Greek name of the *af'awân* افعوان¹.

Diosc. IV (27): Some people call it $\delta\omega\kappa\iota\varsigma$ (*dôris*), others $\alpha\lambda\iota\kappa\iota\beta\iota\alpha\delta\epsilon\iota\omicron\nu$ (*alkibiádeion*). It is a plant with rough leaves, oblong and thin like those of $\alpha\gamma\chi\omicron\nu\sigma\alpha$ (*anchusa*, *Anchusa tinctoria* L.), but smaller. They ooze a certain fluid which sticks to the hand. On the leaves there are small thorns like downy hairs. The plant has small thin branches on either side of the stalk (and small leaves)². One of the branches has smaller leaves than the others. Near the leaves there are purple blossoms carrying fruits which resemble, as to their shape heads of serpents. Its root is thinner than a finger and of a blackish colour. Its root when taken with wine soothes backache and is a galactagogue.

COMMENTARY.

It is *Echium rubrum* Jacq., a borraginacea of South-eastern Europe, or *Echium plantagineum* L. and *vulgare* L. The latter furnishes the officinal drugs *Herba Echii* and *Rádix Echii* or *Buglossi agrestis* (Luerssen II, p. 972).

Synonyms: Gr.: $\epsilon\chi\iota\omicron\nu$ (*échuon*); Lat.: echios, *Pliny*;

1. This Arabic name has probably the same meaning as that given by IB (I, 14), *râs al-afâ'î* راس الافاعي, i. e., "serpents' head".

2. Missing in the texts of Gh. and IB, probably an early copyist's blunder.

Ar.: *âkhiyân* الخيون, *af'awân* افعوان (Gh.), *râs al-afâ'î* راس الافاعي (IB), *af'awâniyya* افوائية (*Idrîsî* p. 21); Pers. and Turk.: *akhiyân* الخيون; Eng.: echium, snake's head, viper's bugloss; Fr.: herbe aux vipères; Germ.: roter Natternkopf.

54. **ÂLÂTINÎ** ألاطينى, *Cancerwort* (*Linaria Elatine* Mill.).

(Lecl. no. 138).

Diosc. IV (40): A plant, the leaves of which resemble those of the bindweed (*Convulvulus arvensis*, *lablâb* لبلاّب). only smaller, rounder and covered with down. Its branches are thin, about one span long, and each five or six grow from one root. They are densely covered with leaves which are acrid. It grows among the stalks of wheat and in cultivated land. Its leaves applied with barley-gruel as a cataplasm, are useful for hot swelling of the eyes, and its decoction controls diarrhoea caused by intestinal ulcers.

Galen VI (XI, 873): It is moderately deterrent and astringent.

COMMENTARY.

All authors agree that the *elatine* of Diosc. is a climbing kind of *Linaria* (scrophulariaceae); but it is uncertain whether it is *L. Elatine* Mill. (according to Mathiolus), *L. spuria* Willd. (Sibthorp) or *L. graeca* Bory (Fraas). A variety of

Linaria spuria Mill. is often confused with *L. Elatine* (Luerssen, II, p. 997).

Synonyms: Gr.: *ἐλατίνη* (*elatine*); Lat.: same name, Pliny; Ar.: *lablâb* لابلاب (IB), *al-lablâb al-ahrash* اللابلاب الاحرش, (Abu'l 'Abbâs al Mâgûsî), *shahîmiyya* شحمية (Medieval Spain, Gh.? IB), *sarâwil al-takûk* سراويل التكوك (IB), *mukhallasa* مخضصة (Modern Syria, Berggren.). Other names by Issa (p. 109). Pers.: *giyâh-i-nawrûzî* گیاه نوروزی; Turk.: *arslan aghzi* ارسلان اغزی, *nevrûz otu* نوروز اوتی, *Avni*; Eng.: cancerwort; Fr.: *linaire auriculaire*; Germ.: Leinkraut.

55. ADHARIYÛN آذریون, *Marigold* (*Calendula officinalis* L.).

(Lecl. no. 30).

Ibn 'Imrân: It is a kind of camomile (*uqhuwân* انخوان see no. 40), sometimes yellow, and sometimes red.

Ibn Ganâh¹: Its blossom (*nuwwâr* نووار) is golden and has in its centre a small black capitulum.

Ibn Gulgul: A plant growing to the height of one cubit. It has longish leaves of the length of one finger, whitish in colour covered with down. It has numerous twigs like (wild) camomile (*tâbûnag* تابونج).

The Nabataean Agriculture: Its flower (*ward* ورد) is

1. A famous Spanish-Jewish philosopher; lived ab. 985-1040 A.D.

yellow and without odour; if there is any odour in it at all, it is fetid. It is a plant which turns round with the sun and closes its blossoms by night. It is said that if a pregnant woman carries it continually in her hand she aborts, and that mice flee from its smoke and flies from its blossom. If pounded and applied as a cataplasm on the lower part of the back, it provokes erection.

Another Author: Its root is useful for scrofula when suspended (at the neck of the sufferer), and if carried by a sterile woman, it cures her.

COMMENTARY.

The name آذریون *âdhariyûn* is Persian (pronounced today *âzariyûn*). Vullers reads also *âdhar-gûn* اذركون, i.e. "flame-coloured, fiery red", a name given as well for a red anemone as for a kind of camomile, doubtless our plant. It is probably *Calendula officinalis* L., a composita of Southern Europe, or another *Calendula* variety.

Bîrûnî, in his short paragraph on *âdhariyûn*, confirms the Persian name of *âdharkûn* اذركون (Issa p. 36 reads اذرجون), and gives the name of *al-hanwa* الحنوه as an Arabic name which is found in early Arabic poems alternatively with *âdhariyûn*.

Al-Idrîsî (p. 25 foll.) gives a description of this plant which is independent of that of Gh. We quote here the translation of the first part of his the paragraph:

"*Âdhariyûn* اذریون : Diosc. did not mention it. Its name

in Latin is *adhriûz* اذريوز, in Persian *malhâral* ملحارل¹, in Syriac *hîrtâma* حيرطاما², in Berber *gûlshâtîn* جولشاتين. It is counted among the variegated plants³; it grows a multitude of branches rather high over the soil springing from one stem. It has leaves like those of the broad basil (*habaq* 'arîd طبق العريض) which is called mountain-balm (*bâdrungbûya* بادرنجوية, *Melissa officinalis*). Its blossom is blackish-yellow, and in its centre there is a black spot from which come the seeds. It is of two kinds, domesticated and wild..."

Then follows a paragraph on its medical qualities.

Synonyms: Ar.: *hanwa* حنة, *Bîrûnî*, *kahlâ* كحلا, *sahlâbi* سهلابي (Modern Egypt, Schweinf.), *bakhûr Maryam* بخور مريم (Medieval Egypt, *Dawûd*); Pers.: *âdhariyûn* اذريون, *Abû Munsûr*, *âzargûn* اذركون, *ardam* اردم, *hamîsha bahâr* همیشه بهار Vullers; Turk.: *nergis* نرگس; Eng.: marigold; Fr.: souci, calendule; Germ.: Ringelblume, Totenblume.

56. ÂRADYÂBÎ آرديابي, Uncertain.

(Lecl. no. 1).

Hubaish: A shrub the leaves of which are like those

1. Not found in dictionaries; may be mutilated by missing diacritical points. *Dawûd* spells it *malgalûl* ملحلول.

2. Equally missing from the dictionaries. *Hartâmetâ* is the chickpea. *Dawûd* spells it *hartâmâ* حرطاما.

3. In the text *nabât an-namsh* نبات النمش; probably a copyist's blunder for *thamnuş* ثمنس (θάμνος) shrub.

of the caper-plant (*kabar* كبر), of a strong smell. It has seeds inside sheaths with appendices like tongues. It is near to coldness and dryness (in its qualities), resolves external hot swellings, mixed with nightshade (*'inab ath-tha'lab* عنب الثعلب) and winter-cherry (*kâkang* ككج *Physalis Alkekengi*) and, when applied locally, soothes the pain provoked by the sting of a hornet.

COMMENTARY.

The name *âradyâbî* آرديابي is missing from all the dictionaries and from most of the Arabic pharmacologies, e. g. from IB and *Dâwûd*. We found in *Ibn Sîna* (I, 262) the same drug under the name of *ardqiyani* اردقياني. *Ibn Gazla* gives the same description under the name of *ardqiyâqî* اردقياقى, undoubtedly abstracted from *Hubaish's* lost "Simple Drugs". *Idrîsî* (p. 26) copies his paragraph under the title of *ardqanâyî* اردقنايى. *Freytag* (I, 25) thinks that, according to Sprengel, it is *Zygophyllum Fabago* (not *Tabago*) L.. More important are the notes abstracted by *Vullers* (I, 77 foll.) from Persian authors. He spells the drug *âridfanânî* آريدفانانى and identifies it with the Arabic *qithâ' al-himâr* قيثاء الحمار ("asses' cucumber", Greek *σίκος ἄγριος*, *sikys ágrios*, i. e. *Ecballium Elaterium* Rich.). This is not probable, but the plant may be another kind of wild cucurbitacea. Persian authors say that the name is of Greek origin. We think that it could possibly be a mutilation of *ὄνου κολοκύνθη* (*ónou kolokynthê*, i. e. asses' vegetable marrow) or some other similar name. In *Bîrûnî* and IB the name is missing.

57. **AMSÛKH** أَسُوخ, *Horse-tail* (*Equisetum arvense* L.).

(Lecl. no. 149 أَسُوخ).

It is called in the vernacular language (of Spain) *shitila* شَيْتِيلَا. It is of two kinds; one is small with thin, knotty and contiguous branches like the leaves of the Spanish broom (*esparto-plant*, *ratam* رَاتَم, *Spartium juncenm* S.); these leaves, when pulled out, separate at the knots. They are large, compact and have a thick wooden stem as thick as the little finger. It grows to the height of about one span. It has no flower, but a flame-red fruit which is astringent and mildly bitter. If this plant is taken with wine it checks diarrhoea and if applied as a cataplasm causes a hydrocele to disappear.

(The other kind is) bigger, has a thicker stem and shorter branches; its fruit is red, but becomes black when ripe. Its uses are similar to those of the first kind. Some people count both as different kinds of horse-tail (*equisetum*).

COMMENTARY.

There is no doubt that this plant is *Equisetum*, a cryptogam which has no real fruit but an archegonium (ovary). The two kinds described by Gh. may be *Equisetum arvense* L. and the greater *E. maximum*, or *giganteum* Thunb., or

1. Foll. p. note no. 1.

E. Telmateja Ehrh.. They were used officinally as diuretics under the names of *Herba equiseti minoris* and *majoris* (Luerssen).

Synonyms: Gr.: ἵππουρις (*hippuris*); Ar.: *amsûkh* ¹ أَسُوخ (probably a Berber name), *dhanab at-khail* ذَنْبُ الْخَيْلِ, *hashishat at-tawkh* حَشِيشَةُ الطَّوْخِ (Modern Syria, *Berggr.*); for other Arabic and Syriac names see *Loew* (I, pp. 1-5), and *Issa* (p. 76): Pers.: same names; Turk.: *hashishet et-tûgh* ² حَشِيشَةُ الطَّوْغِ; Eng.: horse-pipe, horse-tail; Fr.: *prêle*, *queue de cheval*; Germ.: *Schachtelhalm*, *Rosswanz*.

58. **UDHN AL-ARNAB** أُذُنُ الْأَرْنَبِ, *Hound's tongue* (*Cynoglossum cheirifolium* L.).

(Lecl. no. 35, أُذُنُ الْأَرْنَبِ).

Udhn al-arnab (i.e. rabbit's ear) is called (**fol. 10 r**) *udhn al-ghazâl* أُذُنُ الْغَزَالِ (gazelle's ear), and the Berbers call it *udhn ash-shâh* أُذُنُ الشَّامِ (sheep's ear³). It is a plant with

1. IB and Dâwûd spell it *amsûh* أَسُوْح, and give as the Spanish name *inishtella* إِنِشْتِيلَا. We suppose that this is a mutilation of the Spanish *asprilla*, Italian *asperella* (French *presle*, *prêle*).

2. *tûgh* طَوْغ or تَوْغ (Turk.) for horse-tail.

3. IB (p. 17-18) who copies the whole of this chapter in a quotation from Gh., spells these names *âdhân* آذَان, i.e. the plural of *udhn* أُذُن (ear). He gives, moreover, the name of *lasiqî* لَسِيقِ which seems to mean: "sticky".

leaves like those of the waybread (*lisân al-hamat* لسان الحمل i.e. *Plantago major* L.), except that they are thinner and rougher. It is of a blackish colour and on it are soft hairs like white dust, in which character it also resembles the borage (*lisân ath-thawr* لسان الثور, *Borago officinalis* L.). It has a stem, as thick as a thumb, growing to the height of more than a cubit. (It carries) a blue and slightly white blossom like the flower of flax (*kittân* كتان). It is funnel-shaped with calyces containing four grains (nutlets); it is rough, shiny and sticks to clothes. The root has (long) branches like the hellebore (*khurbaq* خربق), black outside and white inside. If it is extracted and rubbed on the face, when fresh, it makes it rosy and beautiful. Its decoction is drunk for dryness of the chest.

There is a second kind, smaller than the first one as to height and leaves; its blossoms are crimson-red.

COMMENTARY.

Probably *Cynoglossum cheirifolium* L. The smaller kind may have been the *C. officinale* L., the root of which (*radix Cynoglossi*) was not long ago an official drug. *Idrîsî* (p. 18) gives, under the name *âdhân ash-shâh* آذان الشاه, a less circumstantial description of the plant mentioning, however, that it grows in Sicily. *Dâwûd* says that the Egyptian peasants call the plant *khudnî ma'ak* خذني معك, i.e. "take me with you" on account of the burdock-like stickiness of the fruit. According to *Schweinfurth* and *Aly Ibrahim Ramiz* the plant does not grow in Egypt to-day.

Synonyms: Lat. (modern): *cynoglossum*; Ar.: *udhn* (adhân) *al-arnab* الأرنب (آذان), *udhn ash-shâh* آذن الشاه, *udhn al-ghazâl* آذن الغزال, *al-lasîqî* اللصيق (IB), *lisân al-kalb* لسان الكلب; Pers. *khar-gûshak* خرکوشک, (Vullers I. 680); Pers. and Turk.: *lisân el-kelb* لسان الكلب; Eng.: hound's tongue, dog's tongue; Fr.: *cynoglosse*, langue de chien; Germ.: *Hundszunge*, Venusfinger.

59. ÂTARMÂLA آطرماله (Undetermined).

(Lecl. no. 99).

A plant, the stem of which reaches the height of about a cubit; it has no branches and its leaves are like those of hemp (*shahdânag* شاه دأنج) except that they are much smaller and arranged in four parallel rows. It has an ear about a span long, very regular and lined with super-imposed sheaths which are round with open orifices, in the shape of the sheaths of hazel-nuts (*bunduq* بندق), except that they are much smaller. Inside are fruits shaped like hazel-nuts and of the size of chick-peas, containing thin red-blackish seeds. On this plant there is an exudation, which is viscid like honey. It (the plant) has thin white flowers which may sometimes be yellow. It grows in barren soil and wild lands (*qafîr* قفر). The seeds are applied as an eye-salve for trachoma (*garab* جرب) and early stages of ophthalmia (*ramad* رمد).

COMMENTARY.

In spite of al-Ghâfiqî's minute description no old or

modern botanist has been able to identify this plant *âtarmâla* آطر. IB simply copies Gh.'s whole chapter, *Ed. Meyer* in his "History of Botany" (III, 213) thinks that it may be *Scrophularia sambucifolia* L.; but *Dragend.* (p. 604) vigorously attacks this hypothesis. The name might be Berber or Spanish.

60. ASÂBI' SUFR أصابع صفر, (Uncertain),

(Lecl. no. 90).

A plant known to the botanists as "the hand of 'Aisha" or "the hand of Mary". Its leaves are like those of *khusâ adh-dhib* خصى الذئب ("wolf's testicles"); the stem is tall, thin and carries purple flowers from below upwards. Its root is as big as a suckling's hand, which it resembles in shape, with five fingers. It is very humid and grows in the sand and near the sea.

Ibn Ridwân: Some kinds resemble the palm of the hand with five or six fingers, and others are like a lion's paw. Its colour is yellow and it is hot and resolvent.

Ibn Sînâ: Its shape is like the palm of the hand, greyish-yellow to white, hard and slightly sweet. Some are greyish-yellow without whiteness, hot and dry in the second (degree). It clarifies the skin and the nervous organs. It is used against insanity.

Al-Magûsî: It is useful against poisons and (poisonous) insects and against abortion.

COMMENTARY.

It is not possible to determine which plant is meant by the foregoing description. The name of *asâbi' sufr* أصابع صفر ("yellow fingers") or *'urûq sufr* عروق صفر ("yellow roots") is applied to-day in the Cairo bazaars to the roots of *Curcuma longa* L. (turmeric) (*Ducros* no. 158). The name of *kaff Maryam* كف مريم ("palm of Mary") and the like is reserved to the Jericho-rose (*Anastatica hierochuntica* L.) (*Ducros* no. 201). But the description of the plant does not agree with either of them, nor with any of the other plants to which, according to *Issa* (p. 63 no. 3), the name of *asâbi' sufr* is given, viz. *Vitex agnus castus* L. and *Memecylon tinctorium* L.. Another mention of the Arabic name will follow in the chapter *kurkum* كركم (turmeric). *Idrîsî* (p. 26 no. 43) calls the same drug *asâbi' al-barsâ* أصابع البرصاء or *asâbi' al-'adhîrâ* أصابع العذراء, the first meaning, "fingers of the leprous woman", the second, "the Virgin's fingers"; he adds that there exist several kinds of this plant. *Bîrûnî*, on the contrary, treats of *asâbi' sufr* and *asâbi' al-'adhîrâ* in two separate chapters, treating them as different plants.

61. ALANG ألنج *Alangium Lamarckii Thwaites.*

(Lecl. no. 135, *al-bugg* البج).

Ibn Ridwân: Roots brought from India, with black spots, bitter taste and a hot quality. I have had experience

with it against urticaria (*sharî* شَرَى), and it was wonderfully effective. I gave it to be drunk on the first day, in the dose of half a drachm with two ounces of oxymel of malobathrum; on the second day I gave half a mithqâl and on the third day one drachm, and it caused the urticaria to disappear entirely. It has the same action when it is smeared on the body with oil of roses.

COMMENTARY.

The name of this drug is misspelt in our MSS. and Leclerc's French edition of Ibn al-Baitar (*albang*, *albîg*, *albugg* etc.). The Cairo edition gives the correct reading, and Dymock (II, 164 foll.) records the Indian names of the plant. It is *Alangium Lamarekii Thwaites*, a cornacea of India. The root contains a very bitter alcaloid which is provisionally called by Dymock alangine.

62. ISFÂNÂKH اسفاناخ, *Spinach* (*Spinacia oleracea* L.).

(Lecl. no. 210).

Agriculture¹: It is a known vegetable; the wild kind is like the domestic one, only of thinner and finer roots and does not grow so high above the ground.

1. Here the "Nabataean Agriculture" is meant.

Ar-Râzî: Temperate, soothing (**fol. 10 v**) to the chest and laxative to the abdomen. It is suitable, by virtue of its temperate quality, to cold and hot temperaments. It does not cause any flatulence like other vegetables, nor does it increase the phlegm in the blood.

Ibn Sînâ: Cold and moist in the last stage of the first degree. It is a better diet than orach (*sarmaq* سَرْمَق). It clears, washes and controls the bile, and is useful against congestive headache.

COMMENTARY.

This now universally known vegetable is not mentioned by Greek and Roman authors, except in Byzantine times as *σαυράκιον* (*spinákion*). It seems to have its origin in the Orient and to have been imported into the Occident by the Arabs.

Synonyms: Ar.: *ra'is al-buqûl* رَيْسُ الْبُقُولِ, *ar-rahâ* الرِّحَا, *isfânâkh* اسفاناخ and similar names (see Loew I, 341 and Issa p. 173); Pers.: *isfânaj* اسفانج, *ispânâkh* اسپاناخ etc.; Turk.: *ispânâq* اسپاتاق; Eng.: spinach; Fr.: epinards; Germ.: Spinat.

63. ÂRÂQÛS آراقوس, *Vicia cracca* L. (?).

1. The MS. G. and IB spell *arâqûa* اراقوا, which may be an old copyist's fault, or be derived from the Greek genitive of *arakos*.

(Lecl. no. 43, ارافوا).

Galen, in the *Book on Aliments* (VI, 552): Small, hard, round grains growing amongst lentils¹.

Agriculture: A similar herb growing also amongst lentils. It carries black grains within sheaths which, when dried, are round. If powdered and mixed with vinegar and water and left in the sunshine for six hours, then thrown into fresh water and made into a paste and painted on hot and very hard swellings, it softens them and relieves the pain.

COMMENTARY.

The identification of this plant with the leguminosa *Vicia cracca* L. is not certain, but very probable. See below the article 131 *Bîqa* بيقه.

Synonyms: Gr.: *ärakos* (arakos), *Galen*; Lat.: aracos, *Pliny*; Ar.: *arâqû* ارافو (IB), *dandarîn* دندران (Issa p. 188); Pers.: *girgîru* گرجيرو (Loew II, 491); Turk.: *burchâq* بورچاق; Eng.: tufted vetch, cracca; Fr.: vesce craque; pois à crapaud; Germ.: Vogelwicke. For more names see below art no. 131.

64. ISLÎKH اسليخ, Dyers' Weed (*Reseda luteola* L.).

(Lecl. no. 67).

1. Galen writes on *ärakos* also in book I chap. 27 of the same work (ed. Kuehn VI, 541).

F. (Abû Hanîfa): An herb with long branches, yellowish in colour, growing in sand and resembling water-cress (جرجير *gargîr*).

Author: A known plant used by dyers. The decoction of its leaves resolves phlegmatic swellings, and with barley-flour is useful against erysipelas. There is a wild kind with much smaller leaves than the first one; its stem possesses many branches spreading on the ground and of greyish colour. At the ends of the branches are many sheaths one above the other; though resembling the sheaths of hyoscyamus (بانج *bang*) they are smaller and softer. Inside them are very minute black grains. The roots are as thick as a finger, between yellow and red and very acrid in taste. It grows in sandy places and in white (chalky?) sites on the mountains. It is called in foreign (Spanish) language *ribât* ريبال. It is useful, when drunk, against flatulent colic and against poison.

COMMENTARY.

The Spanish name *ribât* may be misspelt from *rîsâd*, *reseda*?

Synonyms: Lat.: *reseda*; Ar.: *îslikh* اسليخ, *blîhâ* بليحا, (Modern Egypt, *Forsk.*, *Schweinf.*), *waiba* ويبة (idem); other names in *Issa* (p. 154). Pers.: *isparak* اسپرك, *warth* ورت.

(Schlimmer); Turk: *muhabbet chicheyi* محبة چيچي (Samy); Eng.: dyers' weed; Fr.: *gaude*, *herbe à jannir*; Germ.: *Färber-Wan.*

65. ÎDHÂYÂ RÎZÂ إديا ريزا, 'Idaia 'Pîza *Idaia Rhiza*.

(Lecl. no. 213).

Diosc. IV (44): A plant with leaves like those of wild myrtle. Near the leaves grow long filaments like those that creep round vines. On them the flowers of this plant grow. The root is astringent, and is drunk against diarrhoea; it is also hemostatic.

Galen VI (XI, 888): There is a strong astringency in its taste. It stops hemorrhages when drunk or applied locally, and is useful against intestinal ulcerations.

COMMENTARY.

This name has not yet been identified. Some botanists thought it to be *Ruscus hypophyllus* L.; others took it for *Streptopus amplexifolius* D. C.; both species are li-
liaceae.

66. ANGIBÂR أنجبار, *Snake-Weed* (*Polygonum bistorta* L.).

(Lecl. no. 155).

A plant which commonly grows on the banks of rivers

and amongst brambles ('*ullaiq* علق). Its leaves are like those of trefoil (*ratba* رطب), and covered with down like dust. It has small twigs thicker than those of trefoil, reddish in colour, weak, rising up to a man's height or higher, bending and getting entangled with the brambles on which its branches grow. It has a blackish-red flower. All the parts of this plant are powerfully astringent. It exudes gum, and the juice of its roots, when squeezed, becomes red like mulberry-juice. If mixed with sugar and boiled wine (*maibukhtag* مبيعج) it is useful against hæmorrhage from any part, and against abrasions of the intestines and chronic diarrhoea. It heals fractures and cicatrizes wounds. I heard from a reliable person that he cured an ulcer of the lung of three years' duration by its means though the sufferer had become very emaciated. He also cured another of hæmaturia and gastric hæ-
morrhage after ten years.

COMMENTARY.

This is the polygonacea *Polygonum bistorta* L. The root is used in many lands as a remedy for the bite of snakes. That drug which is sold to-day in the Cairo bazaars under the name of '*irq el-ingibâr* عرق الانجبار is, however, *Potentilla tormentilla* Sibth. (Ducros p. 88). The *Polygonum* is still in use in some lands as a medicinal drug known under the name of *Rhizoma Bistortae* (Luerssen).

Synonyms: Ar.: *angibâr* انجبار; for other names, e.g. *sultân al-ghâba* سلطان الغابة, see Issa (p. 142). Pers.: *anjibâr*

انجبار *Schlimmer*; Turk.: *liflâfe* لفلافه, *qurd panchasi* خورد پنچاسی
'*Avni*'; Eng.: snakeweed, bistort; Fr.: bistorte; Germ.: Nat-
ternwurz, Schlangenwurz.

67. ASAL أَسَل, *Rush* (*Juncus*).

(Lecl. no. 65).

Abû Hanîfa: It is the *kawlân* كولان. It grows in tiny stalks with no (**fol. 11 r**) leaves or thorns, but with sharp edges; they do not branch, and possess no wood. Mats are prepared from it; it is beaten and ropes are made from it. In 'Iraq عراق sieves are made from it. It grows only near water.

Diosc. IV (52): *oxoîros* (*schoinos*) of the marshes. It is of two kinds: one is called *ôxôxoîros* (*oxyschoinos*), with sharp edges, and it, also, is of two kinds; the first has no fruit and the second bears round, black fruits and twigs thicker and more fleshy than those of the other kind. There is yet a third kind with still thicker and more fleshy twigs than the last two, and this is called *ôlôxoîros* (*holôschoinos*). It bears a fruit on its extremity which resembles that of one of the two above mentioned kinds. The fruit of this kind and the fruits of one of the first two kinds, when grilled and drunk with mixed wine, constipate the abdomen, stop uterine hemorrhage, and are diuretic, but cause headache. The fruit of the third kind acts as a soporific when drunk, and when abused causes lethargy.

Galen VIII (XII, 136): This plant is of two kinds, one thin and strong and the other thick and soft. The fruit of this kind is soporific. The first kind is also of two sorts: one is fruitless and the other has a soporific fruit which is less so than the fruit of the first kind. The faculty of these two kinds is a compound of slight earthy and aerial substances. Consequently it produces sleep with a slight cold vapour.

COMMENTARY.

It is evident that *Diosc.*'s description comprises several kinds of rush. The *ôxôxoîros* must be *Juncus acutus* L., the second kind with black fruits called by *Theophr.* (IV, 12) *μελανκρανίς* (*melankranis*) — *Schoenus nigricans* L., the *ôlôxoîros* *Scirpus Holoschoenus* L. The fruitless and the fruit-bearing kinds are probably one species only (*Juncus maritimus* L.?).

Synonyms: Gr.: *oxoîros* (*schoinos*), *ôxôxoîros* (*oxyschoinos*), *ôlôxoîros* (*holôschoinos*) (*Diosc.*), *μελανκρανίς* (*melankranis*), (*Theophr.*); Lat.: *juncus*, *schoenus*, *Pliny*; Ar.: *asal* أسل, *kawlân* كولان, *samâr* سمارة, *al-bût* البوط, (Egypt, *Dâwûd*), and many other names (see *Issa*); Pers. *asal* اسل, *kawlân* كولان, *nayy bâriyâ* نی بوریا (*Schlimmer*); Turk.: same names and *sazliq otu* سازلق اوتی (*Avni*); *sâz* ساز, *hasir-otu* حصیر اوتی (*Samy*); Eng.: rush (bulrush, bag-rush); Fr.: junc (junc aigu, piquant etc.); Germ.: Binse (Strandbinse, Sumpfbinsse, grosse Simse).

68. **ÂMÂRANTÛN** أمارنطون, *Golden Sunflower*, *Helichrysum stoechas* D. C.).

(Lecl. no. 150).

Called by *Hunain* حنين Indian cummin (*kammûn hindi* كمن هندی). He also called it camomile *uqhuwân* اقحوان, I do not know for what reason.

Diosc. IV (IV, 57): Some people call it *ἐλίχρυσον* *helichryson*, and others call it *χρυσάνθεμον* *chrysanthemon*. It is a plant used in the crowns of statues. It has a straight white stem and tiny leaves like the leaves of southernwood (*qaisûm* قيسوم, *Artemisia abrotanum*); they are separate. It has a round umbel (*gumma* جمّة) containing a round body of a golden colour like the heads of thyme when dried. It has a tiny root which grows in rugged places in the depth of the ground. The umbel, with wine, is used against dysuria, insect bites and sciatica. It is also emmenagogue. This plant is also placed between the clothes in order to prevent their being eaten (by moths).

Galen IV (XI, 824): Its faculty is to refine and dilute the blood coagulating in the stomach and bladder; this blood is bad to the cardiac orifice of the stomach¹.

COMMENTARY.

Helichrysum (*Gnaphalium*) *Stoechas* D. C., a compos-

1. In both MSS. a slight error is present: the remedy is bad, instead of the blood

ita, bears to this day in Greece the name of *amáranton*. Crowns and garlands of this plant were found in Egyptian tombs at Hawâra (II to III. cent. A. D.) according to *Keimer* (I p. 12). It was formerly an officinal drug under the name of *Stoechas citrina*.

Synonyms: Gr.: *ἀμάραντον* (*amáranton*), *ἐλίχρυσον* (*helichryson*), *χρυσάνθεμον* (*chrysanthemon*); Lat.: *amarantus*, *Pliny*; Ar.: *kammûn hindi* كمن هندی (*Hunain b. Ishâq*); Pers. and Turk.: no name; Eng.: *cassidony*; Fr.: *gnaphale*, *helichryse*; Germ.: *Immortelle*, *Strohblume*.

69. **AGHÎRÂTUN** أغيراطن, *Sweet Maudlin*, (*Achillea Ageratum* L.).

(Lecl. no. 106).

Diosc. IV (58): *Ἀθήριος* (*thámnos*, shrub) used as fuel, about two spans in length, short, and lying on the ground. It very much resembles the plant called *ὀρίγανος* *origanos* (marjoram). It carries a crown with a flower that resembles water bubbles¹, golden in colour. It is smaller than *ἐλίχρυσον* (golden sunflower, see no. 68) and is called *ἀγέραςιον* (*agératōn*) from the long duration of its flower on it without changing or falling off. It is diuretic, and when applied locally, resolves induration of the uterus.

1. 'Translation of Dioscurides' *πομφολυγῶδες*, i. e. bubble-shaped.

Galen VI (XI, 814): Its faculty is dissolvent.

COMMENTARY.

It is the composita *Achillea Ageratum* L. frequent in Southern Europe.

Synonyms: Gr.: ἀγέραιον (*agératon*); Lat.: same name; Ar.: *aghîrâtun* اغيراطن, *uqluwân usfâr* افحوان اسفر (*Idrisi*, p. 30, 1. 15)¹; Pers. and Turk.: no name; Eng.: sweet maudlin; Fr.: achille agératoire, eupatoire, de Mesué; Germ.: Garbe.

70. IYÂRÂ BÛTÂNÎ (Ἱέρη Βοτάνη), إيارابوطاني, *Vervain* (*Verbena officinalis* L.).

(Lecl. no. 211).

Diosc. IV (60): It is called περιστερέων (*peristéréon*, dove-cote).

It is a plant the twigs of which are about one or more cubits long, angular, covered with sparse leaves like the leaves of the oak (*ballût* بلوط), except that they are smaller and finer, with dentate edges, and of a flavour not exactly sweet. Its root is longish and thin. Both the root and the leaves are good against the bites of insects when drunk with wine, or when applied locally; and against jaundice and chronic phlegmatic

1. *Idrisi* gives two other Arabic names, following a MS. of *Salmawaih* (d. 840 A. D.), viz. *halfâ* and *burdi* حلفاء وبردى; but that is an error.

swellings. When macerated in water and sprinkled about where people are drinking (wine) it makes them very sociable and pleasant, (**fol. 11 v**). It is so called because it is used in purifications when hung on the walls. The name means "the sacred" or "the priestly plant".

COMMENTARY.

This is the well-known verbenacea *Verbena officinalis* L. It is an officinal drug under the name of *Herba Verbenae*. In antiquity it was used for magical purposes. It is still used, particularly in France, for tisane.

Synonyms: Gr.: Ἱέρη βοτάνη (*hierâ botânê*), περιστερέων (*peristéréon*), σιδερίτις (*sideritis*); Lat.: verbenaca, *Pliny*; Ar.: *ra'î ul-hamâm* رعى الحمام, *rigl al-hamâm* رجل الحمام, *sâq al-hamâm* ساق الحمام (for other names see *Issa* p. 188); Pers.: *akmûn-bazân* اکمون بزآن, *shâh-pasand* شاه پسند (*Schlimmer* p. 560); Turk.: *minâ chicheyi* مینه چیچکی, *Avni*, *minêh chicheyi* مینه چیچکی, *Samy*; Eng.: vervain, holy herb, pigeon's grass; Fr.: verveine commune, herbe à tous les maux; Germ.: Eîsenhart, Eisenkraut.

71. ASTRÂGHÂLÛS أستر اغالوس, *Tine-Tare* (*Orobussessilifolius* and *tuberosus*).

(Lecl. no. 68).

Diosc. IV (61): A small θάμνος (*thamnos*, shrub) with

1. Often erroneously spelt *akmûbazân* اکموزان.

flowers and branches like those of chick-peas (*himmis* حمص). The flowers are small and of purple colour, and the root is round like Syrian radish (*figla shâmiyya* فجلة شامية), from which spread black, very hard excrescences, as hard as horns and entertwined together, so that it is difficult to pound them. They are astringent in taste. It grows in windy, shady and snowy places. It is common in Pheneus in Arcadia¹.

Galen VI (XII, 841): It has astringent roots, therefore it is used to dry and heal inveterate ulcers. It constipates the abdomen and stops hæmorrhage.

COMMENTARY.

This is not, as supposed by the majority of translators, one of the numerous kinds of the leguminosa *Astragalus* *Tourn.* of to-day. This latter plant-group is high, wood-shaped, thorny and provides the tragacanth. The ἀστρογάλινος *astrágalos* of *Diosc.* and *Galen* is, according to Fraas, another leguminosa or a kind of vetch, either *Lathyrus* (*Orobis*) *tuberosus* L. or L. (*O.*) *sessilifolius* Sibth. (according to *Berendes* p. 396). Moreover, in Modern Greek the name of *Cicer* and *Lathyrus* is still ἀστρογάλινος (*astragálion*) (*Loew* II, p. 442) after Fraas.

Synonyms: Gr.: ἀστρογάλινος (*astrágalos*); Lat.: *astragalus*, *Pliny*; Ar.: *astrâghâlûs* أسطرأغالوس; Eng.: axe-vetch?; Fr. gesse tubéreuse. Germ.: Knollige Platterbse.

1. The Greek name of this town is Φενεός (*Pheneós*).

72. AWÂQINTHÛS أواقينثوس, *Oriental Hyacinth* (*Hyacinthus orientalis* L.).

(*Lect.* no. 191).

Diosc. IV (62): A plant the leaves and stem of which are like those of *bulbûs* بلبوس (purse-tassel)¹. The height of its stalk is about a span, smooth, and thinner than the little finger. It has a (curved) umbel filled with purple flowers. Its root when drunk with white wine or when children are anointed with it stops night-pollutions. It arrests chronic diarrhoea when drunk, and is useful against (jaundice).

Galen VIII (XII, 146): Its root is bulbous, drying in the first degree, cooling in the second. When applied to the pubis it retards for a long time the growth of hairs thereon. Its fruit is drying in the third degree, of moderate heat and cold.

COMMENTARY.

It is the liliacea *Hyacinthus orientalis* L.

Synonyms: Gr.: ὕακινθος (*hyakinthos*); Lat.: *hyacinthus*, *Pliny*; Ar.: *awâqinthûs* أواقينثوس, *sunbul barrî* سنبل برى, and many other names (see *ISSA* p. 95); Pers.: *sunbul* سنبل, *khîrî barrî* خیری بری, *Schlimmer*; Turk.: *sunbul* سنبل, *jâqût banafshî* یاقوت بنفشه, *Avni*; Eng.: oriental hyacinth; Fr.: *jacinthe orientale*; Germ.: *gemeine Hyazinthe*.

1. See below no. 135.

73. AFÎQÛ'ÛN أفقرون, (*Hypocoum procumbens* L.)
(Lecl. no. 113).

Diosc. IV (67): It grows in fields of wheat and in ploughed grounds. Its leaves are like those of rue (*sadhâb* سذاب) its branches are small, and its faculty is like that of opium which is the resin of poppy.

Galen VIII (XII, 48): It is cooling in the third, (degree) so that it does not differ much from poppy.

COMMENTARY.

This plant is generally identified with *Hypocoum procumbens* L., a papaveracea of Southern Europe, containing a narcotic alcaloid (fumarine)?

Synonyms: Gr.: ὑπέκοον (*hypêkoon*); Lat.: *hypocoon*, Pliny: Ar.: *afîqû'ûn* أفقرون, *al-'ushba al-baldâ*, العيشة البيضاء, (ISSA p. 96), *al gahîra* الجعيرة (Algeria); Pers. and Turk.: no name; Eng.: horned cumin; Fr.: cumin cornu; Germ.: Lap-penblume.

74. ANGURA أنجورة, *Roman Nettle* (*Urtica pilulifera* L.).
(Lecl. no. 165).

It is the *qurrais* قريس and known as *al-hurrai* الحريق ("the burner").

Ibn Hassân:¹ It has rough leaves, yellow flowers and minute thorns which are not easily visible. When touched by any part of the body, it burns, pains and reddens it. It is of two kinds, a small and a large one with many yellow leaves. Its seeds are like lentils, and are used in medicine.

Author: The nettle is of three kinds. The first is already mentioned, the seeds of which are like lentils in their size and shape. It is shiny green and hard, in round rough buds from which hang long thin filaments. The second is the bigger of the two kinds mentioned by Dioscurides. Its leaves are like those of wild thyme (*sinsibîr* سنسبیر, *Sisymbrium*), except that it is blacker and rougher and the stem reddish-black. It carries many more leaves than the other two and it is the roughest of them all. Its seeds are about the size of mustard-seeds, except that they are more flattened, white and blue in colour. The third kind is the smallest and weakest and possesses the smallest seeds.

Diosc. IV (93): ἀκαλήφη (*akalêphe*). It is of two kinds, one is rougher and blacker than the other. Its leaves are wider, its seeds smaller than the seeds of hemp (*shahdânag* شهذانغ). The other has very small seeds and softer leaves.

Galen VI: (XI, 817): The faculty of its leaves and fruit is resolvent and aphrodisiac, particularly with syrup of

1. A Spanish muslim physician of the XIIIth Cent. A.D. See IAU II p 79.

grapes, and moderately relaxes the bowels and warms them; it is (fol. 12 r) an antidote for poisons.

Galen VI: Its fruits are not used in medicine, and the faculty of the plant is like that of the plant called *βουβώνιον* (*bubônion*, *Aster tripolium* L.), but it is far inferior to it.

COMMENTARY.

The main kind mentioned by Gh. and *Diosc.* is the Roman nettle *Urtica pilulifera* L. and its variety *U. balearica* L. The seeds were formerly a medicinal drug (*Semina urticae Romanae*). The third kind mentioned by Gh. is *Urtica urens* L. and *dioica* L.; *Idrisi* (no. 15, p. 14) gives a somewhat different description.

Synonyms: Gr.: *κνιδή* (*knidê*), Hippocrates, *ἀκαλήφη* (*akalêphê*), *Diosc.*, *ἀκαλόφη*, *Theophr.* and *Galen*; Lat.: *urtica* (Scribonius Largus); Ar. *angura* انجرو, *qurrais* قريس, *hurraiq* حريق (all these names designate burning, stinging) *banât annâr* بنات النار (i.e. "daughters of fire"), *sha'r al-'agûz* شمر العجوز (Lower Egypt, *Schweinf.*). For other names see *Issa* p. 186. Pers.: *anjura* انجرو, *gazna* كزنة; Turk. *isirghân* ايسرغان, *Avni*; Eng. (Roman) nettle; Fr.: *ortie* (romaine); Germ.: *Pillennessel*, *Brennessel*.

75. ÂKHÎNÛS أخينوس, (*Campanula ramosissima* Sibth¹).

1. In the old editions of *Diosc.*, the Greek name is always misspelt *êrinos* (*érinos*); Wellmann set it right in his new edition of 1907.

(Lecl. no. 25).

Diosc. IV (141): A plant that grows near to rivers and to lakes formed from natural sources. Its leaves are like those of basil (*bâdhrûg* بادروج, *Ocimum Basilicum* L.) though it is smaller and higher and is crenated; it has five or six twigs from one cubit to one span in length, a white flower, and a small, black, astringent fruit. Its twigs and leaves are full of moisture.

Galen VI (XI, 880): Its fruit is astringent and checks the matters which are carried to the eye and ear.

COMMENTARY.

This plant has been identified with several kinds of *Ocimum* and *Campanula*. Fraas' hypothesis *Campanula ramosissima* Sibth. seems the most suitable of all, as this plant has its habitat in Greece.

Synonyms: Gr.: *êxînos* (*ekhînos*), *êrinos* (*érinos*); Lat.: *erineon* (*Pliny*).

76. USHNÂN اشنان, *Salt-wort* (*Salsola kali* L.)

(Lecl. no. 87).

Abû Hanîfa: It is the *hurd* حرض, used for washing clothes. It is of many kinds and they all belong to the salty plants.

Ibn Guraig: It is the kali-plant.

Another: It is a plant with no leaves, but with branches and twigs and with something like knots. Its bunches are full of moisture. It grows very big and develops very thick wood, which is used as fuel. It has a salty taste, and (when burnt) causes a very hot fire; the smell of its smoke is disagreeable.

COMMENTARY.

It is *Salsola Kali* L., a well-known chenopodiacea of North African and many other deserts. The other kinds mentioned by Abû Hanîfa may be *Salsola soda* L. and the like.

Bîrûnî gives an extract from a "Book of Poisons" (perhaps that which was ascribed to the alchemist Gâbir b. Hayyân جابر بن حيان (?) saying that five drachms of the Persian *ushnân* provoke abortion, and that ten drachms kill an adult person. The best kind resembles sparrow's dung and is called *kirmak* كرمك or *ushnân al-khaff* اشنان الخف; it is used by the washers. He then quotes an unknown author, at-Tezekjî التزكجى, who calls the moist *ushnân qâqul* قاقق and *adh-dhâ'ibâ* الدائباء. Abû Hanîfa said that the purest and best *ushnân* was growing in the valley *al-Khadârim* الخضارم in the region of Yamâma (Central Arabia).

Synonyms: Ar.: *ushnân* اشنان, *hurd* حرص, *qallî* قلى, *ghâsûl* غاسول and others (see Issa p. 161); Pers.: *ushnân* اشنان, *kirmak* كرمك, *Bîrûnî*; Turk.: same names; Eng.: salt-wort, kali; Fr.: soude, kali; Germ.: gemeines Salzkraut.

77. ABÛFÂYIS أبو فائس, *Thorny Spurge* (*Euphorbia spinosa* L.).

(Lecl. no. 10).

Diosc. VI (159); Some call it *Abûfâûs* أبو فؤوس. It is a plant with which clothes are washed; it grows on the shores of the sea and in the sand. It is a *θάμνος* (*thamnos*, shrub) used as fuel, growing very plentifully¹, possessing small leaves like those of olives but thinner and softer than they are. Between the leaves there are hard thorns, whitish, angular, and sparse. (Its flower) resembles the buds of the plant called *κισσός* (*kissós*, ivy), as if it were bunches accumulated together except that they are smaller and softer, with some redness and whiteness in their colour. Its root is thick, but soft, full of a sap which is extracted like the sap of *θάψια* (*Thapsia garganica* L.)² and is stored either separately or with flour of bitter vetch (*karsana* كرسنة, *Vicia Ervilia* Willd.). If taken in the dose of one *obolus* it purges the abdomen of bile, phlegm and humidity. Its juice acts in the same manner.

COMMENTARY.

There is no doubt that this is *Euphorbia spinosa* L. It

1. Translation of Diosc.'s ἀμφοιλαφής.

2. It is a sharp milky sap used as a caustic.

is frequently confused with the following plant (no. 78).

Synonyms: Gr.: *ἵπποφαές* (*hippôphaes*); Lat.: *hippophaes*, *hippofeos*, (*Pliny XXVI*); Ar.: *abûfâvis* أبو فابيس, *ghâsûl râmî* غاسول رومي, *rigl al-farkh* رجل الفرخ (Spain, Gh.), *al-'aqrabî* العقربى (Spain, Gh.); Eng.: thorny spurge; Fr.: *hippophaeé des Grecs*, *euphorbe épineuse*; Germ.: *Stachelige Wolfsmilch*.

78. ABÛFAISTÛN أبو فيسطون, *Hippophaiston*.

(Lecl. no. 99).

Diosc. IV (160): It is a plant which grows in company with *Hippophaes*. It, too, is a kind of thorn-plant with which clothes are washed. It is a plant which grows creeping on the ground, with soft buds and small leaves only but no flower. Three *oboli* of it with *melikraton* (*melikraton*, i. e. honey-mead) purges the phlegmatic humour and is good for orthopnoea, (*intisâb an-nafus* انتصاب النفس), epileptic fits and neuralgia.

Author: It is of very many kinds, and the best known in our land is that kind which is described above¹; it is called *rigl al-farkh* رجل الفرخ, (chicken's claw) from the form of its leaves; and also *al-'aqrabî* العقربى because its leaves resemble the tails of scorpions. Our physicians use it instead of *qâqal* قاقال (*Cacalia verbascifolia* Sibth.). Another kind is called *tardag* طردج. Its leaves are like those of *hayy al-'âlam*

1. This remark refers to *Hippophaes* (chap. 77).

(Sempervivum arboreum L.) except that they are finer. They are bushy and inclined to be purple-coloured. It has fine seeds and its shrub grows horizontally, but it rises to about two cubits in height. Its wood is white and hard and is called *ar-rughl* الرغل (*Atriplex, sea-orach*) and *al-ushnân al-fârîsî* الاشنان الفاريسى (*Persian salsola, Salsola soda L. ?*)¹. One kind called *al-ghâsûl* الغاسول rises to a span and its branches are as thin as needles: it has fine leaves, so thin that they look like seeds. It has a white flower, very thin indeed, and slightly reddish. Its branches are numerous and spread on the ground. It grows in salty soil in the company of *quizan* قيزان (*Salsola vermiculata L. ?*)². It melts gum-lac. It is called in foreign language³ (**fol. 12 v.**) *shirgâla* شرجالة. Two drachms of it, when drunk, are diuretic. There are other kinds, the *qâqal* قاقال being one of them; they all have a saltish taste.

COMMENTARY.

This important paragraph containing al-Ghâfiqî's own botanical knowledge is missing from IB's book. Chapters 76 to 79 are also missing from the Gotha MS... But the Taimûr MS. is better and there is no apparent gap.

1. See commentary of chap. 76.

2. The name in this form is not found. Foureau gives the name of *qedhdhan* (قذدن or قظن) for *Salicornia spec.* and *Salsola vermiculata*.

3. Viz. Spanish; perhaps *cera de gale*?

The many kinds of *Hippophaë* which Gl. describes are very different plants. *Riḡl al-farkh* رجل الفرخ is sea-rock (Cacile maritima Scop.; ISSA), a crucifera. *At-tardag* الطردج is perhaps a kind of *Atriplex* (rosea L.?). The Arabic name *rughl* رغل is specially applied to the chenopodiacea *Atriplex halimus* L., (ISSA p. 27) and *A. dimorphostegium* Kar. (Burton). *Ghāsūl* is a common Arabic name for plants used for washing clothes on account of their containing potash. In the present paragraph the Author probably means the chenopodiacea lead-grass (*Salicornia fruticosa* L., Issa p. 160). *Salsola Kali* L. (see no. 77) is equally used for washing.

79. **ÂFIYÛS** آفيوس, Pear-Rooted Spurge (*Euphorbia apios* L.).

(Lecl. no. 118).

Diosc. IV (175): It is sometimes called *ioxás* (iskhás) and *khamaibálanos* (khamaibálanos), also wild radish (*figl barrí* فجل برى), and the Caramanians call it the radish-like (*al-figl al-fajl* الفجل). It is a plant growing from the ground in two or three sticks resembling the sticks of lemon grass (*idhkhir* اذخر, *Andropogon schoenanthus* L. see no. 2), fine and red, and slightly raised above the ground. Its leaves are like those of rue (*sadh-âb* سذاب) except that they are more elongated. It may be green with a small fruit and a root like asphodel (*al-khunthâ* الخنثى, *Asphodelus ramosus* L.), but rounder resembling the

shape of a pear, and full of juice; it has a black bark, and a white inside. The upper part of this root causes vomiting of bile and phlegm, and the lower part is laxative. The juice of the root causes vomiting and purgation. It is extracted by pounding the root and putting it into an urn. Water is then poured on it; the whole is stirred up, and what floats of the juice on the surface is removed by means of a feather and dried.

COMMENTARY.

This plant is generally admitted to be *Euphorbia apios* L., a plant frequent in Greece and in the southern Mediterranean islands.

Synonyms: Gr.: *āpios* (āpios), *ioxás* (iskhás), *Diosc.*, *ῥάφανος ὀρεῖα* (*rhapfanos oreia*) *Theophr.*; Lat.: *apios ischas*, *Pliny*; Ar.: *âfiyûs* آفيوس, *shalgam barrí* شلجم برى, *figl barrí* فجل برى, *al-hadaqi* الحدقي, *Issa*; Pers.: *afiyûs* آفيوس; Eng.: pear-rooted spurge; Fr.: *euphorbe à racine de navet*; Germ.: *Birnwolfsmilch*.

80. **ÂFITHÎMÛN** أفثيمون, *Dodder of Thyme* (*Cuscuta Epithymum* Murr.).

(Lecl. no. 112).

Diosc.: IV (177): It is a flower of the kind of hard plants which resemble thyme (*sa'tar* سمتر). These are fine

buds, light, with filaments like hairs. When drunk in the dose of four drachms mixed with honey and salt and a little vinegar it purges phlegm and black bile. It grows in abundance in Cappadocia and Pamphylia.

Galen VI (XI, 875): Its faculty resembles the faculty of headed thyme (*al-hâshâ* الحاشا, *Thymus capitatus* LK), but it is more effective in every sense. It heats and dries in the third degree.

Ibn Guraig: The best kind is the red one with a sharp smell which is imported from Crete.

Hubaish: Its faculty is strong in getting rid of black bile; it does not suit sufferers from yellow bile, and it causes them to vomit.

Bûlus (Paul of Aegina)¹: It is given in the dose of six drachms pounded in nine ounces of milk.

Another²: To be mixed with the decoction when it begins to cool and then crushed and strained, because cooking destroys its faculty.

Paul (VII): As for *ἐπιθυμβρον* (*epithymbron*) it is something growing on thyme; it purges almost like epithymum, but is weaker.

1. In the text Yûnus, copyist's mistake.

2. IB takes him erroneously for the author al-Ghâfiqî himself.

Author¹: This is the epithymum used by all physicians of our time, whereas the real epithymum is not known by them. This plant is imported from the country of the Berbers. It is a kind of cuscuta (*kushûth* كشوث); most of what grows on the thyme are very fine filaments as red as agate, with no roots nor leaves, but with small heads, whitish and smaller than those of *kushûth*; it is very soft with a delicate flower that grows in the spring time. It destroys the plant by entwining with it. Its faculty is like that of epithymum, but slightly weaker.

COMMENTARY.

This parasitic plant is the convolvulacea *Cuscuta Epithymum* Murr., growing on *Thymus Serpyllum* etc. The Ancients had probably confused the different kinds of *Cuscuta* (*C. europaea* L., growing on nettles and hemp, *C. Epilinum* Weihe, flax-weed, growing on flax etc.). The kind described by Gh. in his note is probably a North-African variety of *C. Epithymum*, perhaps var. *Trifolii* Choisy. IB (Lecl. I, p. 99) says that in his time it came to Egypt (where it does not grow in our time, according to *Ramis*) from Crete and Jerusalem. *Abû Mansûr* (p. 150) mentions under the name of *aflanja* افلنجة or *kushûth zanjî* كشوث زنجى another kind of *Cuscuta* which is, according to *Schlimmer* (p. 172

1. This paragraph by Gh. himself is missing from IB.

foli.) *Cuscuta monogyna* Vahl which grows also in Egypt and in other hot lands. Its medicinal use is very ancient.

Synonyms: Gr. ἐπίθυμον (*epithymon*, Diosc., Galen), ἐπίθυμβρον (*epithymbron*, Paul of Aegina); Lat.: epithymum (*Pliny* XXVI, 55); Ar.: âfithîmûn افثيمون, kushûth كشوت, kammûn كمون رومي (*Birîni* after al-Fazârî). For many other names see the long and learned paragraph of *Loew* (I, pp, 453-62) and the synonyms by *Issa* (p. 63); Pers.: aflanja افلنجه, kushûth zanji كشوت زنجي (*Abû Mansûr*); sikâr 'Alî سكارعلى (i.e. "Alî's bread" (*Idrisî* p. 24 l. 4), shan شن, (*Schlimmer* 173); Turk. eftîmûn افثيمون, sheitân sâchî شيطان ساجي, Samy; Eng.: dodder, heelweed; Fr.: cuscute, epithym, cheveux de Venus; Cerm.: Kleeseide, Flachsseide etc.

81. **ALÛFUN** ألوفن, *Globularia* (*Globularia* Alypum L.).

(Lecl. no. 139, *Alûbun* ألون).

Diosc. IV (178): It is a plant used as fuel, with a reddish colour and fine twigs. It has a soft, light flower and a root like white beet (*silq* سلق, *Beta vulgaris* L.), full of acrid juice. It has seeds resembling those of epithymum (dodder). It grows abundantly on shores, particularly those of Lybia. The seeds, with vinegar and salt purge like epithymum and slightly irritate the intestines.

(**Author**)¹: *Al-Bitrîq* البتريق in his translation of Galen's book² said that Alypias grows on sands and coasts; it is hot and purgative. The choicest kind of it is that which is (prepared) by pulling out its roots, peeling them and throwing away the pulps. It is to be known by its good bark and its white tubes with a resinous secretion which are easily broken and are not fibrous. He asserts that it is the turpeth (*turbid* تربد, *Ipomoea turpethum* R. Br.), and that the foregoing description applies to of it; but this is an error. *Paulos* mentioned this remedy³ without mentioning its root, and citing its seeds only, as likewise did Diosc. (*Ibn Wâfid* thought this latter to be *tripôlion* (tripôlion) and connected it with the sayings of)⁴ Diosc. on Trifolion which is also called Tripolion⁵; this is the turpeth.

COMMENTARY.

The plant is *Globularia Alypum* L. of the Mediterranean

1. Henceforward the text is in disorder in both MSS. We found most of the missing part two pages further on (fol. 14 r) in the paragraph no. 91, and were able to restore the original text with the help of IB's text.

2. We were not able to find out which book of Galen is meant; in the *De Simpl.* Alypon is not mentioned.

3. Viz. Alypon: see *Adams* III p. 55.

4. This phrase is missing from both MSS. and has been restored by us according to IB p. 53.

5. The names are very much mutilated in all the three texts. On the top of fol. 13 r follows a phrase belonging hereto.

region, since a long time used as a popular remedy (purge). Al-Bitrîq is mentioned by *Ibn Abi Usaibi'a* (*Uyûn al-Anbâ'* عيون الأنباء I, p, 205) as a translator of some works of Galen. He is perhaps identical with Politianos, Patriarch of Alexandria a physician, who died, according to Ibn Abi Usaibi'a (II, p. 83) in 902 A.D.

Synonyms: G.: ἄλυπον (*álypon*); Lat.: *alypon* (*Pliny* XXVII); Ar.: *alûfun* الوفن (Gh.), *alûbun* الوبن (IB), 'ainûn عيون (IB); for other names see *Issa* p. 88. Turk.: *hashishe-i-kürreviye* حشيشه كرويه (*Avni* p. 265); Pers.: *giyâh-i-kurravî* گیاه کروی (Naficy); Eng. globularia; Fr.: *alype*, *globulaire*, *thé arabe* etc. (see *Issa* p. 88); Germ.: *Dreizähnlige Kugelblume*.

82. ÎRÎGHÂRUN إريغارون, *Groundsel* (*Senecio vulgaris* L.).

(Lecl. no. 215).

Diosc. IV (96): A plant, the length of the stem of which is about a cubit; its colour is slightly reddish; its leaves are like those of the rocket (*gargîr* جرجير, *Eruca sativa* Mill.), dentate, only much smaller. The smell of its flower is like that of apples; it blossoms and spreads out rapidly and in its centre appears something upright like hair which becomes white in the spring. When drunk it causes suffocation. The meaning of its name is "the old man in the spring"¹. Most

1. The Greek name of the plant is derived from *ēag* (spring) and *γέρων* (old man), because it grows white hairs in the spring.

of it grows on fences (of walls)¹. and in towns. Its root is not used in medicine.

Galen VI (XI, 884): Its faculty is composite, cooling and resolvent.

COMMENTARY.

This plant is the *composita Senecio vulgaris* L.. It is a weed very common in Europe and Asia, and served in former times as a medicinal drug under the name of *Herba Senecionis* (Luerssen).

Synonyms: Gr.: ἑρίγερων (*érigérôn*) (*Theophr., Diosc. and Galen*); Lat.: *senecio* (*Pliny* XXV); Ar.: *irîghârûn* إريغارون, *shaikh ar-rabi'* شيخ الربيع etc. For other names see *Issa* p. 167; Pers.: *arîghârûn* اريغارون; Turk.: *qanariye otu* فارية اوتى (*Avni*); Eng.: *ragwort*, *groundsel*; Fr.: *seneçon commun*; Germ.: *Gemeines Kreuzkraut*, *Kreuzwurz*.

83. ÎTHIYÛFÎS إيثيوفيس, *Aethiopian Sage* (*Salvia Aethiopsis* L.).

(Lecl. no. 212).

Diosc. IV (104) A plant the leaves of which are like

1. IB (215 Lecl. I, 176) reads instead of *siyâgât* سياجات (fences) *sibâkhât* سباخات (pools, manures). The first reading is, however, the correct translation of the Greek text.

those of *φλόμος* (*phlōmos* فلووس, mullein, *Verbascum*), downy, lying on the ground round the root. It has a square rough and thick stem resembling the stem of *μελιτταίνη* (*melittainē* مالبطانا, balm, *Melissa officinalis* L.) and *ἀρκτίον* (*árktion* ارقطيون, burdock, *Arctium tomentosum* Schkuhr). Many tufts grow from it issuing from one stem; they are long and thick. When dried they become black and hard like horns. It has a fruit of the size of the bitter-vetch (*al-karsana* الكرسة, *Vicia Ervillia* Willd.), in each cavity of which are two grains. It grows abundantly in Messenia and on Mount Ida. The decoction of its root is useful for sciatica, intercostal pain and roughness of the throat, in the form of a drink or as a *linctus* with honey.

COMMENTARY.

This plant is the labiate *Salvia Aethiopis* L., frequent in Southern Europe as a weed on rubbish heaps.

Synonyms: Gr.: *αἰθιοπὶς* (*aithiōpís*); Lat.: *aethiopis* (*Pliny* XXIV, XXV, XXVI); Ar.: *ithiyûbis* ايثيويبس, *ithiyûfis* ايثيوفيس; Pers. and Turk.: no names; Eng.: Aethiopian sage; Fr.: (sauge) éthiopienne; Germ.: Filzblättriger Salbei.

84 **ÂRAQTIYÛN** ارقطيون, *Woolly Burdock* (*Arctium tomentosum* Schkuhr).

(Lecl. no. 30).

Diosc. IV (105): It is also called *ἀρκτιότρον* (*arktiûtron*.) It is a plant the leaves of which are like those of *φλόμος* (*phlōmos*, mullein, *Verbascum*), save that they are more downy and more round. Its root is sweet and white, its stem soft and long and its fruit like small cumin-grains. The decoction of its root and fruit soothes tooth-ache when gargled; with wine it is diuretic. It is useful for sciatica when drunk and for burns when smeared on them.

Galen VI (XI, 837): Its faculty is extremely refining and it cleanses a little.

COMMENTARY.

Most of the modern botanists agree to see in the *arktion* of Diosc. *Arctium tomentosum* Schkuhr, a composita growing as a weed on rubbish, in Europe and Asia. The botanists of older times thought it to be *Conyza candida*, *Verbascum linnense* or *V. ferrugineum* (according to *Berendes* p. 426 - 7). See *Loew* I, p. 378 foll.

Synonyms: Gr.: *ἀρακτίον* (*árktion*); Lat.: *lappa*, (*Pliny* XXI, 104); Ar.: *âraqtiyûn* ارقطيون; Pers.: same name, and *risha-i-Bâbâ Adam* ریشه بابا آدم (i. e. "fringe of Father Adam"), Turk.: *dul'awret otu* طول عورت اوتی (*Avni*), *arâqitân* اراقيطون (mutation of *arctium*, *Samy*); Eng.: woolly burdock; Fr.: bardane (laineuse); Germ.: Filzige Klette.

85. ANOTHER ARAQTIYÛN ¹ أرطايون آخر,
Medicinal Burdock (Arctium Lappa L.).

(Lecl. no. 90).

Diosc. IV (106): Some call it *προσωπῖς* (*prosopis*) and *προσώπιον* (*prosôpion*). Its leaves are like those of the pumpkin (*qar* قرع, *Cucurbita pepo* L.), but larger, harder, more blackish: They are covered with down. It has no stem, and its root is large and white. The eating of two drachms of it is useful for ulcer (abscess) of the breast.

Galen VI (XI, 837): It is drying, dissolving, astringent; it heals inveterate ulcers.

COMMENTARY.

This second *Arctium* is doubtlessly the composita *Arctium Lappa* L. or *Lappa officinalis* All. The root (*Radix Bardanae*), the oil from the root, the leaves and extracts from them are still to-day used as medicinal drugs in European pharmacopœias.

Synonyms: Gr.: ἄρκτιον (*árktion*), *Galen*, ἄρκτιον (ε)ῖον (*árktion*), *Diosc.*, προσωπῖς (*prosopis*), *Galen*, προσώπιον (*prosôpion*), *Diosc.*; Lat.: *lappa*, *Pliny*; Ar.: *araqtiyûn* أرطايون, 'ammi khudnî ma'ak

1. Thus called by *Galen* (XI, 837), while *Diosc.* calls it ἄρκτιον or ἄρκτειον, *arktion*. This may be an early copyist's blunder in the Greek MSS.

عمى خذنى معك (i. e. "uncle, take me with you") (*Berggr.* 833), *râ's al-hamâma* رأس الحمامة (Algeria, Issa p. 19); Pers. and Turk.: same names as for the above mentioned (*Arctium tomentosum*); Eng.: medicinal burdock; Fr.: bardane officinelle; Germ.: gebräuchliche Klette.

86. AFÎFÂQTIS أفيفانطس, *Rupture-Wort* (*Cleome arabica* L.? or *Herniaria glabra*?)

(Lecl. no. 114).

Diosc. IV (108): It is also called *ἡλλεβορίνη* (*helleborinê*); it is a small *θάμνος* (*thamnos* shrub) with small leaves. It is drunk against toxic drugs and against pain in the liver.

Qustâ (ibn Lîqâ) in his (Book of) *Corrections of Remedies*¹; It is a small *θάμνος* with small leaves like those of the rue (*sadhâb* سذاب, *Ruta graveolens* L.) with nearly invisible dentations. It has a thin stem on which is white down like that on the stem of the big kind of endive (*hindibâ* هندبا, *Cichorium Endivia* L.). Its height is about three to four fingers, and it has thin twigs of the height of one finger spreading out from about the middle of the stem to its top. Its grains are like black cumin (*shûnîz* شونيز, *Nigella sativa* L.), sometimes red and sometimes black, but very rarely white. It is kept in sheaths like the seeds of radish

1. The title of this book is missing from the lists of the literary works of this celebrated physician and translator (lived about 900 A. D., see Introduction). It may be identical with his "Book of Prevention of the Nocivity of Poisons" (IAU I, 245).

(*figl* فجل). They are not long. The colour of the flower is allways like that of the fruit. It grows in places easily reached by water and in those near to the sea. It often grows amongst beans or lentils (*qatâni*, plur. of *qutniya* قطنية, قطاني) or mixed with barley and wheat. Its smell is like that of lemons (*utrug* اترج) and its root is aromatic. It has the shape of (**fol. 13 v**) truffle (*kamâ'ah* كمأة). It is smooth, with no vessels in it. Some people think that it grows in the sand and in stony soil; it is often found on the coasts of Syria and of Alexandria. It is well-known to many people, and they use it against poisonous drugs and pains or obstructions in the liver and spleen, drunk thoroughly pounded in doses of half a *mithqâl* مثقال on three successive days.

COMMENTARY.

The description given by Diosc. is too short and too vague to allow an identification of the plant. The description by Qustâ b. Lûqâ gave rise to various interpretations. Sprengel thought it to be *Herniaria glabra* L., a *Cephalanthera* or a *Spicanthes*. Fraas identified it with *Epipactis grandiflora* All. (*Cephalanthera ensifolia* Rich.), and Littré with *Neottia spiralis*. But Sickenb. (*Plantes* p. 21 foll.) objects that all these plants are orchidaceae which do not grow naturally in Egypt. He proposes to identify *Epipactis* with *Cleome arabica* L. This plant, however, bears several Arabic names (see Issa p. 52), and the question is therefore still unsettled.

Synonyms: Gr.: ἐπιπακτίς (*epipactis*); Lat.: *epipactis* (*Pliny* IV); Ar.: *afibaqtis* افيبقةطس, IB, *afifâqtis* افيفاقطس, Gh.; The English name for *Herniaria glabra* L. is rupture-wort.

87. **AWNAGHRÂ** أونغرا, *Onagrade* (*Epilobium hirsutum* L.).

(Lecl. no. 161)

Diosc. IV (117): It is also called *ονοθηρα* (*onothêra*) and *ονοῦρος* (*onoûros*, better reading *onothouris*). It is a tree-like *θάμνος* (*thamnos*, shrub) of considerable size; its leaves are like those of the almond-tree (*lawz* لوز, *Prunus amygdalus* Stock.), except that they are broader; they resemble also those of the lily (*sawsan* سوسن, *Lilium candidum* L.). The flower is large, like that of the pomegranate. Its root is small ¹, white, and exhales, when dried, a smell like wine: it grows on mountains. It prevents the spreading of malignant ulcers.

Galen VII (XII, 89): The smell of its root, when dried, is like that of wine.

Rufus² in the (Book on) *Melancholy*: A plant by means of which the lion is tamed, because it contains a faculty which soothes the spirit.

1. Diosc. calls the root long (*μακρά*).

2. The famous Greek physician who lived in Alexandria in the first half of the second century A.D.

COMMENTARY.

It is the onagracea (oenotheracea) *Epilobium hirsutum* L.; but the ὄναγρον (*ónagron*) of Galen is sometimes identified with *E. angustifolium* L. The first named plant has been found in the crowns of Egyptian mummies and in tombs of the Greco-Roman period in the Fayyûm (Keimer). The ὀνοθήρας (*onothêras*) of *Theophr.* (IX, 19, 1) is perhaps the same plant, although Sir Arthur Hort¹ renders it by *Nerium Oleander*.

Synonyms: Gr.: ὄναγμα (*ónagma*), ὀνοθήρα (*onothêra*), ὀνοῦρις (*onoûris*), *Diosc.*, ὄναγρος (*ónagros*), ὀνοθοῦρις (*onothouris*), *Galen*; Lat.: oenotheris (*Pliny XXIV*); Ar.: awnaghra أوناغرا, farfâr فرفور, 'uqqaid عقيق (Schweinf. after Forskal, p.19), râs el-gâmûs راس الجاموس (Issa p. 75); Turk.: yâqi otu ياقى أوتى, *Avni*; Eng.: onagrade, apple-pie; Fr. epilobe hérissé, onagre; Germ.: Rauhhariges Weidenröschen, St. Antoniuskraut.

88. ÂSTÎR ÂTÎQÛS أسطير أطيروس, *Sea-Starwort* (*Aster tripolium* L.).

(Lecl. no. 64).

Ihn Wâfid took it for the astringent *al-hâlîba* الحالبية² i.e.

1. Theophrastus' *Enquiry on Plants*, Loeb Class. Library, No. 79. London & New York 1926, vol. II, p. 467.

2. In the text الحالبية قاطبة which gives no sense; it is to be corrected الحالبية القاطبة i.e. the astringent "inguinal plant". See Commentary.

the bitter vetch (*al-qarsa'na* القرسنة, *Vicia Ervillia* Willd.), but he was wrong in that, as it is the plant which is called in foreign (i.e. Spanish) language Castila (*qastila* قسطلية).

Diosc. VI (119): It is also called βουβώνιον (*bubônion*). It is a plant which has a hard and rough stem, on the end of which is a yellow flower resembling that of the camomile (*bâbûnag* بابونج). It is sometimes inclined to a purple colour. It has incised heads and leaves which, in shape, resemble stars. But the leaves issuing from the stem are oblong and covered with down.

Galen VI (XI, 852): This plant is called βουβώνιον (*bubônion*), a name derived from the appellation of the groin, as it heals any swelling in it when applied to or suspended on it (or when its flower is held in the left hand)¹.

Diosc.: It is useful for gastritis, for hot swellings of the eye and laceration of the pupil². The drinking of (the infusion of) the purple flower is useful for croup and the epileptic fits of boys.

COMMENTARY.

This plant has been identified with *Aster Amellus* L.,

1. This last phrase is missing from Galen and from IB; it is probably the interpolation of a copyist who took it from Diosc. (p. 269 l. 18).

2. I.e. iris. The text of Diosc. reads "and other prolapses of the anus (ἕρξα)". It was probably in the origin "of the iris" (ἱριδος), as Ibn Sarapion also reads "iris".

and *Aster Tripolium* L., a composita mostly European. The root and leaves (*Radix, Herba Asteris Attici sive Bubonii*) were medicinal drugs not long ago in use for the diseases specified by Diosc. As to the Spanish name, it is given in a note to the Arabic translation of Diosc. as *qastâla* قسطالة (castella?, *Lecl.* I, p. 63).

Synonyms: Gr.: ἀστὴρ Ἀττικὸς (*astêr Attikôs*, *Diosc.*), βουβωνίων (*bubônion*, *Diosc.*, *Galen*), ἀστέριος (*astériskos* *Theophr.* IV. 12, 2) Lat.: aster, bubonia (*Pliny* XXVII) Ar.: *hálibi* حالي (IB no. 552), *khurram* خرم (*Hunain*, accord. to *Loew* I, p. 368); Pers.: *gul-i-minâ* گل مینا (*Schlimmer* p. 54), *gul-i-urba* گل اربا (*Richardson*); Eng.: sea-starwort, Michaelmas daisy; Fr.: aster maritime, tripolium; Germ.: Strandaster.

ISÛFÛRÛN إسفورون *Creeping Fumitory* (*Fumaria capreolata* L.)?

(*Lecl.* no. 89: إسفورون).

Diosc. IV (120): It is called *φασήλιον* (*phasêlion*) because it is a plant which resembles the *φάσηλος* (*phâsêlos*), i.e. the white kidney-bean, (*tûbiyâ* لوبيا, *Dolichos Lobia* Forsk. or *Vigna sinensis* Endl.). At the origin of the leaves issues something white resembling threads, twisted like the ones issuing from the white kidney-bean plant. At the end of the plant are fine heads filled with seeds the flavour of which is like that of anise (*anîsûn* انيسون, *Pimpinella Anisum* L.)¹. It is useful with

1. *Diosc.* (p. 269 l. 13) reads: that the flavour of the seeds is like that of *αζάριδιον* (black cumin), and that of the leaves like *ἀνησον* (anise).

the wine called *μελίκρατον* (*melikraton*, honey-mead) for pains of the liver and chest, and for cough.

Galen VI (XI, 891): A little astringency exists in its seeds. It cleanses, checks the thick chyme and tones the limbs.

COMMENTARY.

This plant has not been identified with certainty. It is more likely to be *Fumaria capreolata* L. or its variety *F. Vaillantii* Loisl. (Fraas), which is frequent in Greece in shady valleys and on rocks. *Sprengel* prefers another fumariacea *Corydalis claviculata* Pers. which is equally frequent in Greece.

Synonyms: Gr.: *ισόπυρον* (*isôpyron*), *φασήλιον* (*phasêlion* *Diosc.*), *φασιολον* (*phasiolon*, *Galen*); Lat.: isopyron, phasiolon (*Pliny* XXVII); Ar.: *isûfûrûn* إسفورون; Pers. and Turk.: same name; Eng.: (creeping) fumitory; Fr.: fume-terre (rampante); Germ. Rankender Erdrauch.

90. ÂBÛGHLÛSÛN أبو غلوسون, *Horse Tongue* (*Ruscus Hypoglossum* L.).

(*Lecl.* no. 67).

Diosc. IV (129): It is a small *θάμνος* (*thamnos*, shrub) with leaves like those of that wild myrtle (*al-âs al-barri* الآس البري) which are thin (*Ruscus aculeatus* L.). It has a thorny tuft, and at its end, near the leaves, excrescences resembling tongues; (the latter) are useful in softening

ointments and are used against headache when carried on the head.

COMMENTARY.

The description agrees with the liliacea *Ruscus hypoglossum* L. which is frequent in Southern Europe and on the Mediterranean Islands. Its leaves with *R. hypophyllum* L. were formerly used as a medicinal drug (*Herba Uvulariae sive Bonifacii sive Bilinguae*) (Luerssen).

Synonyms: Gr.: ὑπόγλωσσον (*hypóglōsson*); Lat.: hypoglossa (*Pliny* XXVII), myrtus silvestris (*Pliny* XV); Ar.: *abūghlūsūn* أبوغلوسون (Gh.), *awbūghlūsūn* أو بعلسن (IB), *lisān al-faras* لسان الفرس (*Issa* p. 159); Eng.: horse-tongue, double tongue; Fr.: hippoglosse, langue de cheval; Germ.: Zungenförmiger Mäusedorn.

91. ANF AL-'IGL أنف العجل, Snapdragon (*Antirrhinum majus* L.).

(Lecl. no 162).

Diosc. IV (30): Ἀντίρρινον (*antirrhinon*), and it is also called ἀνάρρινον (*anarrhinon*) and λυχνίς ἀγρία (*lychnis agria*). It belongs to the plants which renew their existence every year¹. It resembles Anagallis (pimpernel) as to leaves and twigs, and its flower is like the snout of a calf². Some people

1. An annual plant; translation of Diosc.'s πόα (πόα).

2. From this fact the Arabic name is derived.

pretend that this plant, when kept in lily-oil and used as ointment for the face, makes it acceptable (graceful).

COMMENTARY.

It is the scrophulariaceae *Antirrhinum majus* L., growing in the Mediterranean region, but also cultivated in more northern gardens as a decorative plant. The herb was formerly a medicinal drug with the names of *Herba Antirrhini*, *Herba Orontii majoris* sive *Capitis vituli*. According to *Theophr.* (IX, 19, 2) the man who wears it wins great fame. Diosc. and other Greek authors copied this information from him.

Synonyms: Gr.: Ἀντίρρινον (*antirrhinon*), ἀνάρρινον (*anarrhinon*, *Diosc.*, *Theophr.*); Lat.: antirrhinum (*Pliny* XXV-XXVI); Ar.: *anf al-igt* أنف العجل (calf's snout), *lisān al-'asfūr* لسان المصفور (*Loew* III, 350), *tumm as-samaka* تم السمكة (*Loew* ibid). For other names see *Issa* p. 20. Modern gardeners call it *antirina* انترينا; Pers.: *gul-i-maimūn* گل میمون (*Schlimmer* p. 42); Turk.: *arstan aghzi dinlen chichek* ارسلان آغزی دینلن چیک (*Samy*); Eng.: snapdragon, calf's snout; Fr.: gueule de lion, gueule de loup, muflier; Germ. Löwenmaul, Dorant.

92. ANBATRUN أنبطرن, *Frankenia?* (*Frankenia pulverulenta* L.?). (fol. 14 r, 1. 5)¹

1. Put in order by us.

(Lecl. no. 166).

Galen VI (XI, 875) : It is also called "beak-like" ¹.

Diosc. IV (179) : It is also called *φασκοειδές* (*phaskoeidēs* i.e. "lentil-like"). It grows in mountainous places, amongst the rocks, and on the shores of the sea; it is (then) of salty flavour, and, when growing far from the sea, becomes very bitter. When taken with the drink called *ὑδρόμελι* (*hydromeli*, hydromel) or with broth, it purges phlegm and bile.

COMMENTARY.

This plant was identified by Sprengel with the umbellifera *Crithmum maritimum* L., whilst Fraas prefers *Frankenia pulverulenta* L. Gh. himself did not know the plant otherwise he would have surely mentioned it.

Synonyms : Gr. : *ἐμπέτρον* (*ēmpetron*), (*Diosc.*, *Galen*); Ar. : *anbatrun* انبطرون (IB), *anbatrūn* انبطرون (IB), *garmal* جرمال, *gurmail* جرميل Schweinf. For other names see Issa p. 84.

93. US-HUFÂN اسحفاق, Uncertain.

Lecl. no. 71, *us-hufâq* اسحفاق.

(**Abu Hanîfa**) ² : It is a plant which creeps on the earth like ropes. Its leaves are like those of colocynth

1. In Galen's text *πρασκοειδές* (*prasoeidēs*).

2. So in IB. Our MSS. omit this name.

(*hanzal* حنظل, *Citrullus Colocynthis* Schrad.), but smaller. It has horns (husks) smaller than those of *lūbiyâ* لوبيا (*Dolichos Lubia* Forsk.), in which are round red grains useful for sciatica.

COMMENTARY

Nobody, until now, has been able, to identify this plant. The description agrees with a leguminosa of the kind of jequirity (*Abrus precatorius* L.), but it is too vague to allow an exact identification. The name is Arabic, from *sahafa* سحاف "to creep".

94. UMM WAG'AL-KABID أم وجع الكبد, Rupture-wort, (*Herniaria* Tourn.?).

(Lecl. no. 151).

Abû Hanîfa : It is one of the smallest herbs. Sheep like it. It has a grey flower in a round calyx (*bur'uma* برعومة) with a very small horn. It is called by this name, because it is useful for pains of the liver and yellow gall if squeezed on the epigastrium.

COMMENTARY.

The description given by *Abû Hanîfa* is too vague to allow an exact identification of the plant. Botanists agree that it has some characters of the caryophyllacea *Herniaria* Tournefort. *Herniaria glabra* L. was in former times an

and the *samur* ¹ and the *talh* طلع are only other kinds; the last being *umm ghailân*.

Hamza says: It is the wild jujube (*as-sidr al-barri* السدر البري *Zizyphus Lotus Lam.*), and this kind of *talh* طلع has crooked thorns.

Abû Hanîfa says: It is the biggest and the greenest of the acacias (² *idâh* غصاه) and that which produces the greatest quantity of gum. Its thorns are long and thick and it has no heat in its roots (?); it has a calyx (*bur'uma* بروما) of aromatic smell. The husks issue something like common beans or like Syrian carobs. If there are many trees growing together in a valley they are called *an-nâta* النوطه ³, and the smaller are called *al galâdhî* الجلاذى ⁴. The gum of *talh* is red; there appears between the "beard" (fibres of the bark) and the pith something resembling gum, but which is not gum; it is sticky, adherent to the fibres, sweet, palatable and of aromatic odour. People suck it as a deodorant to their breath. When the fibres are pulled off, something red like blood is found inside (a part of which) is thrown away, and the other is washed and chewed, and it forms the best and

1. *Samur* is still to-day the name for *Acacia spirocarpa* H. in the Yemen.

2. In the text *ghidâh* غصاه, a copyist's error.

3. I. e. a thicket of thorn-trees.

4. Plur. of *guldhâ* جلدنى; the above meaning is missing from the dictionaries.

whitest chewing gum (*'ilk* علك). As to the *talh* طلع mentioned in the Qur'an, all commentators agree that it is the banana (*mawz* موز) ¹ taken metaphorically, and nobody would take it for *umm ghailân* ام غيلان, except the ignorant of the institution of grace...".

Al-Idrisi, the famous geographer (see Introduction chap. I, no. 44) and contemporary of al-Ghâfiqî gives in his "Collection of Remedies" (*Kitâb al-Gâmi' fî l-Adwiya* كتاب الجامع في الادوية) some other interesting remarks (no. 45 on p 27, of the MS. 3610 of the Fâtih Mosque, Istanbul): "*Umm ghailân* is mentioned by Diosc. in his IIIrd Book. He called it *âxarvâ 'Aqûbuzij* (*âkantha Arabikê*), and the meaning of those words is "Arabian thorn-plant" ². It is a tree which does not grow high, but is overhanging, with many curved branches. Distributed on it are pointed thorns like canine teeth. It has leaves resembling those of wild jujube (*'unnâb* عتاب, *Zizyphus Lotus Lam.*) and a red gum of the colour of blood".

After having discussed the faculties of the remedy *umm ghailân*, *Idrisi* (in line 6) gives it the name of "the menstruating tree" (*ash-shagara al-hâida* الشجرة الحائضة) on account of the very red colour of its gum.

1. We shall see in the chapter *talh* طلع that this explanation is due to the famous Arabic grammarian al-Khalîl b. Ahmad (d. about 790 A.D.).

2. IB (Lecl. 1335) identifies, however, this plant with *shukâ'a* شكة i. e. the thistle *Onopordium Acanthium* L.

The red colour of the gum on which both authors insist favours the identification of the tree with *Acacia arabica* var. *nilotica* Del. The expressed juice of the husks is called *aqâqiyâ* اقاقيا. For numerous Arabian synonyms of the desert acacias see Loew II, pp. 377-391, Blatter pp. 682-3 and Issa pp. 2-3.

96. AHLÂL QUSTÂ اهلل قسطا *Balsamic Tansy*, (Tanacetum Balsamita L.).

(Lecl. no. 190).

(**Author**)¹: It is a known species of the sharp smelling aromatics sown in the gardens. Its colour is between white and green and its action is stronger than that of the balm (*bâdhrang-bûya* باذرنبویه *Melissa officinalis* L.)².

COMMENTARY.

Botanists agree in identifying the above description with the composita *Tanacetum* (*Chrysanthemum*) *Balsamita* L., still cultivated in village gardens. According to *Dragend.* (p. 677) it is used as an antispasmodic, emmenagogue, anthelmintic, antidote and nerve tonic.

Synonyms: *ahlâl qustâ* اهلل قسطا, *hashishat al-malika* حشيشة الملكة

1. This word is missing from both MSS. and has been interpolated by us in accordance with the text of IB (I, p. 66).

2. In IB this paragraph is somewhat longer,

المسك (Issa p. 177); Pers. and Turk.: *tarkhûn* طرخون (Avni p. 590); Eng.: balsamic tansy; Fr.: *tanaisie odoriférante*; Germ.: Balsamkraut, Frauenminze, Marienwurz.

97. ILB إلب, (kind of tame poison), *Vincetoxicum sarcostemmoides* Schwft.?

(Lecl. no. 144).

Abû Hanîfa: A thorny tree looking like the lemon-tree (*utrug* اترج *Citrus medica* Risso), growing in mountains; it is very scarce. None of the *digâg* الفجاج is equivalent to it — *ad-digâg* is every tree with which wild beasts are attracted and poisoned¹ — and the most pernicious of them is *al-ilb* الإلب. Its fresh ends are crushed, meat is mixed with them and cast to wild animals, and they are not long to die when they eat it. If they only smell it without eating it they are rendered blind and deaf. The most pernicious *ilb* is that of *Khafardîd* خفر ضيف² i.e. a mountain of the *Sarât* سرأة somewhere in *Tihama* تهامة.

COMMENTARY.

As-Sarât is the name of a range of hills which form the limit of the table-land of Arabia and at the same time

1. These latter two words *ai tusamm* اى تسم have been disfigured in all the MSS of IB to Ibn Nessim ابن نسيم — a non-existent author!

2. Uncertain reading. Perhaps *Hafir al-Dabîb* حفير الضبيب of Hamdânî's Geography of Arabia? (Leiden 1891, I. p. 146 l. 20).

the eastern frontier of Tihâma. This latter is the strip of coast-land running from the Sinai Peninsula south-eastward on the shore of the Red Sea to the Yemen and the south coast of Arabia. The name Khafardid is missing from all geographical dictionaries.

Abû Hanîfa's very summary description does not help to an exact identification of the *ilb*-tree. Sontheimer called it *Datura ferox*. Sickenb. (Die einfachen Arzneistoffe der Araber Wien 1893 p. 18) believes it to be a kind of *Carissa* (*Acokanthera*). But we find in Schweinfurth's investigations on the flora of South-Arabia (p. 178) the name of *elb* (probably علب, perhaps a mis-hearing for إلب) for the asclepiadacea *Vincetoxicum* (*Cynoctonum*) *sarcostemmoides* Schwf., a plant found and named by himself. It is a scarce plant, a strong mountain shrub. Its juice is used in East Africa as a poison for catching fishes. Probably Abû Hanîfa never saw the tree itself, as it was rare. Thus it is uncertain whether his description of a lemon-tree-like plant corresponds to the shrub *Vincetoxicum*.

Mu'tamid whose author, Sultan Yûsuf b. 'Umar originated from the Yemen did not mention *ilb* at all.

98. ALQÛN ألقون ? (Rosa foetida Bost. ?)

(IB 169 and 227 b, *âniqûn* ألقون ?).

Ar-Râzî: It is the fetid rose; it is hot and dry; and its

root is like that of pellitory of Spain ('*âqir qurhâ* عاقر قرحا, *Anacyclus pyrethrum* D. C.).

COMMENTARY.

This may be the yellow rose of Persia (*Rosa lutea* L.) the flowers of which — sometimes red inside — have a disagreeable smell of bed-bugs. The identification is uncertain.

Synonyms: *alqûn* (?) *âliqûn* (?) ألقون (Gh.), *âniqûn* ألقون, (IB) *ward muntin* ورد متنى (*Râzî*), *murayyaha* (?) مريجه; Germ.: Wachrose, Feuerrose, Kapuzinerrose.

99. ÎDHMÂMÎDH إيدماميد, Unknown Persian Tree.

(Lecl. no. 164, *andâhîmân* انداهمان).

Ar-Râzî: A Persian name; it is a tree on the twigs of which is a kind of wool. It is of a very astringent taste and confines the bowels. He called it in another place *barmiyân* برميون and he said in a third place *îrâmâyî* ایرامای, a remedy of Kirman.

Badîghûrûs: It is very useful against diarrhoea by its specific property.

COMMENTARY.

Vullers (I, p. 147) says that *îdimâmîd* ايدماميد is a tree of the description corresponding to that of Râzî. *Harawî*

(p. 33) calls it *idâmîl* ايداميد and describes it as “a forest tree „ (*â'ik dirakht*) آئك درخت. Identification of this plant is not possible. Badighurus or Badhighuras باديفورس is an unknown Hellenistic physician frequently quoted by ar-Râzî.

100. AFQARÂSÛN افقارسون Unknown plant.

(IB, Lecl. missing).

Ibn Sînâ : A Persian remedy, good for the memory.

Ar-Râzî : We use it all for the memory ; it is good for the intelligence.

COMMENTARY.

Nobody has been able, until now, to identify this plant. The original article of *Ibn Sînâ* (I, p. 262) is a little longer and reads in the following manner :

“ *Aqfarâsiqun* افقراسيقون : a Persian remedy called *ad-daiha* الاديمة and *al-hazm* الحزم. Organs of the head : good for the memory, and intelligence”.

The other names could not be found in any Persian Dictionaries. The first name sounds Greek. Could it be *ἀγριοκάρδαμον* (*agriokárdamon*), i.e. the wild cress ?

Birûnî mentions a drug *âfârîqân* افارقون which is, according to Ibn Mâsa, the stone of the wild olive, and according to ad-Dimishqî, mezereum (*mâzariyân* مازريون, *Daphne Mezereum* L.); *Birûnî* does not accept these assertions.

101. AFSÛN افسون, Unknown Persian drug (uncertain reading).

(IB, Lecl., missing).

Ibn Sînâ : A Persian remedy, hot and fine, sharpens the understanding and the intelligence. In another place he says: *abra*ق ابرق, a Persian remedy good for the memory and the intelligence ; I think it is the above-mentioned drug.

COMMENTARY.

The original text of *Ibn Sînâ* (I, p. 263) reads *afsûn* افسون, the Persian dictionary of *Vullers* (I, p. 115) *aqshûn* ااقشون. This drug is, according to him, called *sa'adat-i-khabîs* سمادة خبيس by the inhabitants of Shîrâz (in Persia). But no identification of these names has been possible.

102. ATMÛT اطموط ; *Bonduc-nut* (*Caesalpinia bonducella* Fleming ?).

(Lecl. no. 130).

Ibn Sînâ : Hot in the second, moist in the first degree ; it strongly clears white lepra (*baha*ق باهق). In another place he says: *Atmât* اطماط is an Indian remedy, and its faculty is like that of the orchid (*bûzîdân* بوزيدان, *Orchis Morio* L. ?); it is (fol. 14 v) aphrodisiac. I think it is the *ritta-nut* الرته ¹.

1. The text of both MSS. reads *al-barriyya* البريية which must be a copyist's blunder.

COMMENTARY.

The identification of this drug is not quite certain. The most useful to us is the paragraph concerning it by *al-Birini*: "*Atmât*. Some people mentioned that it was a Greek remedy; others said that it was the Indian bean, *al-bâqilâ al-hindî* البانلا الهندي, which is dotted with black, and is hard like the stone which is called in their (the Indian) language *Akutmakut* ١ اكنمكت. *Ar-Râzi* mentioned it as *atmât* اطمات and said that it was a remedy the faculty of which was like that of *bûzîdân* بوزيدان".

We see that Ibn Sinâ copied *ar-Râzi*.

Ibn Al-Baitâr (I. p. 39) says: "*Atmât*, *atmât* and *atiût* 2 is the Indian hazel-nut (*al-bundug al-hindî* البندق الهندي) known as *ar-ritta* الرته. Some of them (the authors) alleged that it was the betelnut (*fawful* فوفل, *Areca Catechu* L.), but this is not true; it is the *ritta*-nut, as we have said before. The description of the Indian hazelnut will come under the letter *bâ* ب ٣.

There IB (I, p. 119) gives a long paragraph beginning

1. See paragraph 108. *Dymock* (I p. 497 fol.) confuses the name of the stone with that of the plant.

2. Doubtless a wrong reading.

with a quotation of the well known Arabic historian *al-Mas'ûdî* on *ar-ritta*.

The description somewhat agrees with that of the bonduc-nut from the leguminosa *Caesalpinia bonducella* Fleming (*Guilandina bonduc* L.). *Issa* (p. 35) gives to this drug the Indian name *qârah* قارح which probably reads *qâranj* قارنج (see *Dymock* I, p. 496).

Ducros (p. 137) states that the *bundug hindî* of the bazaar druggists in Cairo is not the *Guilandina bonduc*, but simply hazel-nuts.

Synonyms: Ar.: *atmât* اطموط, *atmât* اطمات, *gawz ar-ritta* جوز الرته, *bundug hindî* بندق هندي; Pers.: *bundug hindî*, *khâya-i-Iblîs* خاية ابليس (i. e. "Devil's testicles" popular name according to *Dymock* III, p. 497); Eng.: gray bonduc, bonduc-nut (nicker tree); Fr.: bonduc, oeil de chat, eniquier, guenic; Germ.: Kugelstrauch, zweistachlige Guilandine.

103. **AWSIN** اوسين, (better *Aw-Sapîd*) *Indian Water Lily* (*Nelumbium speciosum* Willd.), a White Variety.

(Lecl. no. 198, *awsid* اوسيد).

Ar-Râzi: A kind of Indian water-lily (*nîlûfar hindî* نيلوفر هندي); hot and dry.

COMMENTARY.

The Persian name of this drug seems to be disfigured

by both Gl. and IB. The correct reading is probably that of *Ibn Sînâ* (I p. 263): "*Aw-sabid* أو-سبید is a kind of Indian water-lily. *Ibn Mâsargawaih* says that it is hot and dry".

It is very probable that this is a white variety of the Indian waterlily, *Nelumbium speciosum* Willd. This plant has mostly pink flowers and is thus described by Theophrastus and Dioscurides. It is a native of India and has been probably introduced in to Egypt by the Persians.

It was first mentioned, as an Egyptian plant by Herodotus; its fruits are edible and are called by *Theophr.* (IV 8) and *Diosc.* (II, 166) *Αἰγυπτίος κέρατος* (Egyptian bean); it bears the corresponding Arabic name¹.

Synonyms for *Nelumbium spec.*: Ar., Pers. and Turk.: *nîlûfâr hindî* نیلوفر هندی Pers.: *aw-sapid* او-سپید; Eng.; peltate water lily, "Egyptian" lotus; Fr.: lotus sacré, nélombo; Germ.: Indischer Lotos. For other names see below article no. 128.

104. ARTAD-BURAND أرند برند *Uncertain*.

(Lecl. no. 47).

Ar-Râzî: A Persian remedy imported from Sigistân²; it resembles a split-up onion. It is useful for haemorrhoids.

1. See the article *Bâqilâ Qibtî* ("Coptic bean") no. 128.

2. The border district between Persia and Afghanistan.

Here is surely a short gap in the Arabic texts of T. and G, as IB (I, p. 19 last line) reads: "Al-Ghâfiqî: I am perfectly convinced that it is *ad-dalbûth* الدلبوث. "This latter name, spelt also *darbûth* دربوت designates, with many others, a gladiolus or sword-grass (see Issa p. 87), perhaps the iridacea *Gladiolus communis* L. As to the Persian name, *Ibn Sînâ* (I. p. 263) and IB (I, p. 19) give the more correct reading of *artad-burrîd* ارتد برید which designates in Persian a split up or cut root. *Lecl.* (no. 47) reads *arîd-barîd* ارید برید, *Dâwûd* (I. p. 58 last line) *ârandîrand* ارند برند and says that it is the root of the white lily (*sawsan abyad* سوسن أبيض *Lilium candidum* L.). *Ibn Gazla* calls the drug *artad-bartad* ارتد برتد, repeats ar-Râzî's paragraph and adds: "I do not know anything more about it."

105. ISFING إسفينج *Sponge*.

(Lecl. no. 75).

It is called (*ghaim* and غيم *ghâmam* غمام).

Ibn Sînâ: It is a marine substance, porous like felt; it is said to be an animal that moves in the water and that sticks to any object whatever coming in its way, and never releases it.

Diosc. IV (120): *Σπόγγος* (*spóngos*); there is a male kind, thin in its holes, condensed and called *ἀλιπής* (*alipês*): and a female kind which is the opposite of the male. Sponges may be burnt in the same manner as Halcyonium (*zabad al-bahr* زبد البحر shell of sepia).

Galen XI (XII, 376): The burnt ones are sharp, resolvent. One of our teachers used it in the treatment of accidental hæmorrhage after incisions, when it was dry and totally devoid of any humidity. Moreover, he dipped it in pissasphalt or in liquid pitch¹. New sponges are much more effective from the fact that the faculty gained by them from the sea is still intact and active in them.

COMMENTARY.

The "male" sponge of *Diosc.* may be the hard *Euspongia zimocca* L., the "female" the softer *Euspongia officinalis* L., our common sponge (*Berendes* p. 542)

Synonyms : Gr. σπόγγος (*spongos*), Lat.: sponsia, spongea; Ar.: *isfing* إسفنج; Pers. and Turk.: same word, pronounced *isfunj*. The Turkish word *sünger* سونجر is derived from Modern Greek σφουγγάρι (*sphungari*) Eng.: sponge; Fr.: éponge; Germ.: Schwamm.

106. ITHMID إثميد, *Stibium*.

(Lecl. no. 18).

It is the *kuhl* كحل.

Diosc. V (84): *Stimisit* سطيسيت²: The best kind is

1. The following is abridged by BH.

2. Thus in T; G reads *stimist* سطيسيت. This spelling is remarkable because different from the readings of the ordinary editions of *Diosc.* (στίμι and στίβι) but very near the Ancient Egyptian reading *m s d m t*.

the one which is easily crumbled, shiny and brilliant, has layers, is smooth on the inside and clean of any impurities. Its faculty is agglutinating, astringent and cooling. It heals ulcers and removes redundant granulations in them. It stops epistaxis originating from the meninges of the brain. It may be washed in the same manner as cadmia, burnt copper and filings of lead. It is ripened by being kneaded in grease, placed in burning charcoal and left until the grease is burnt, then removed from the charcoal and administered with the milk of a woman who had given birth to a male, or with the urine of young boys mixed with old wine.

Galen : To be replaced by burnt *ark* ارك¹.


COMMENTARY.

It is *sulphurate of antimony*, still largely in use in the whole Orient as a remedy and a cosmetic for the eyes.

In Ancient Egypt it was equally well known under the name of *m s d m t* ⲙⲟⲩⲟⲩⲙⲟⲩⲧⲉⲩ (Coptic ⲉⲩⲧⲏⲩ, ⲉⲩⲧⲏⲩ) and all the modern names in Oriental and European lang-

1. This word is unknown. It might perhaps be a mistake by the copyist for *ariki* اركي (see no. 107). Meant is a place in the Pseudo-Galenic *De Succedaneis* (XIX 743): ἀντὶ στίμματος κοπιζοῦ λειψὶς χαλκοῦ ("instead of Coptic stibium scales of copper"). The common Arabic name for scales of copper is, however, *tûbâl an-nahâs* توبال النحاس.

guages (*stibium*, *antimonium* etc.) are derived from the Egyptian.

Synonyms: Ancient Egypt.:  ; Coptic: **CTHM**, **CΘHM**; Gr.: *σιβί* (*stibi*, *Diosc.*), *σιμί* (*stimmi*, *Galen*); Lat.: *stibi*, *stibium*; Ar.: *ithmid* ائمد, *kuhl aswad* كحل اسود, *kuhl isfahâni* كحل اصفهانی, *kuhl kirmânî* كحل کرمانی, *sukra* سكره (? *Dâwûd*); Pers. and Turk.: *surma* سورمه و سمره; Eng.: *antimony* - *collyrium*; Fr. *antimoine*, *koheul*; Germ.: *Schweifelantimon*, *orientalische Augenschminke*.

107. ¹ **ĀRIKĀN** أريكان, *Ochre*.

(Lecl. no. 51).

It is also called *arîkî* أريكي, in Greek *ὄχρα* (*okhra*).

Ibn Al-Gāzzār: *Al-arîkî* are small yellow stones which, when burned, turn red.

Diosc. V (93): The best kind is the lightest in weight in which the yellow colour is deep and pervades all its parts. It is easily crushed and must not be adulterated with other stones of the land of Attica. It is sometimes burned and washed as *cadmia* القاميا is washed. Its faculty is astringent and it makes hot swellings disappear. With

1. Thus in T: G spells *arikhân* اريخان, IB (I, p. 20) *artakân* ارتكان. We could not discover the origin of this name, nor that of *ariki*. Might it be derived from the Greek island Eretria?

κηρότης (*kêrôtê*)¹; it fills ulcers with healthy granulations and destroys redundant ones.

COMMENTARY.

Ochre is a combination of hydroxide of iron with clay. It was used in Antiquity for painting (see *Pliny* XXXV, 35) and still is. It turns red when burnt.

Synonyms: Gr.: *ὄχρα* (*ochra*) Lat.: *ochra*; Ar.: the above mentioned uncertain readings; moreover *ukhra* اخر (from Greek) and *azankân* ازنگان (*Berggr.* p. 865), *tîn asfar* طين اصفر ("yellow clay"); Pers.: *gil-i-barsh* گل برش (*Schlimmer* p. 404); Turk.: *okhra* اوخرا, *sâri bâyâ* ساری بویا (*Avni* p. 416); Eng.: *ochre*, *ocher*; Fr.: *ocre jaune*, *ochre*; Germ.: *Ockererde*, *Gelberde*.

108. **AKATHMAKATH** اكاثمكث², *Eagle-Stone*.

(Lecl. no. 130).

It is the "stone of childbirth", the "eagle stone" and the "vulture-stone", because it is found in their nests. It is also called "the stone of facility" because it facilitates childbirth when hung on the left thigh of the woman in labour wrapped up in (a piece of) camel's skin. It is called

1. I. e. wax-plaster.

2. G reads *akhtamakht* اختمخت; but the above spelling is the correct one.

in Greek *ἀετίνης* (*aetitis*) or belonging to the vulture because vultures carry it to their nests to show it to their fledglings.

Ibn Gulgul: It is a stone inclined to redness, and when shaken there issues a sound from it like that of bells, although when broken nothing is found inside it.

Ar-Râzî in the *Book of Substitutes*: *Akathmakath* is an Indian remedy resembling hazel-nuts except that it is flatter; it is greyish in colour. When shaken, there issues a sound from it as if something else was inside it and, if broken, something like the grain of a hazel-nut comes out of it. It is slightly whitish. I found in an Indian book¹ that it facilitates childbirth when hung on the pregnant woman's thigh; I tried it and found it true.

The same Author says in the *Book of Specific Qualities*: It is something like the egg of a sparrow and resembles a stone containing another one inside it, which is loose.

And in the *Continens* (*al-Hâwî* الحوى): *Akathmakath* is an Indian remedy which has the same action as that of the peony (*al-fâwâniyâ* الفاونيا, *Paeonia officinalis* Retz), when triturated with water and anointed on an organ (**fol. 15 r**) which issues vapours of black bile.

Xenocrates²: The stone called *ἀετίνης* is of four kinds;

the first is the Yemenite; it resembles in its size a gall-nut, is black and light, carrying inside it a hard stone. The second is the Cyprian, it is wider and more elongated than the Yemenite, like an acorn. It carries inside it a stone or sand or pebbles. It is smooth and very soft and easily crushed by the fingers. The third comes from Libya. It is small, soft, sand-coloured: it carries inside it a small white stone easily crushed. The fourth is the Italian¹ found on the coast, resembling sand. It is white and round, facilitates childbirth and cures sterility in the form of a pessary.

COMMENTARY.

Both the origin and vocalization of the word اکثمکت are unknown. Some spell it *ikthamakth*, others *akthamakth*, *akithmakith* and *akthamukth*. It is missing from the Sanscrit dictionaries. In Hindî and Hindûstânî one could perhaps find an explanation in the adjective *ikathhâ* اکثها "collected together", and *mukt* مکت pearl. According to *Freytag* (I, p. 46) it is an Indian word, though the Persians thought it to be Syriac (*Vullers* I, p. 116).

Ibn Gazla takes this drug for a plant, confounds it with *atmât* اطموط (see no. 102) and is rebuked by IB (I, 51, Lecl. I. p. 121).

1. Indian books on drugs and poisons were translated into Arabic, e. g. under the reign of Hârûn ar-Rashîd (786-809 A. D.).

2. Xenocrates of Aphrodisias (ab. 1st. cent. A. D.) wrote on drugs and aliments and their marvellous qualities. He is frequently quoted by Galen.

1. In both MSS. clearly spelt *al-îtalî* الايطالى, but IB and other sources read *al-antâki* الانطاكي i.e. the Antiochian; this is probably the correct reading.

In the Pseudo-Aristotelian *Book on Stones*, a creation of the Syro-Persian period (about 500 — 600 A.D.) it is said that the eagle puts this stone under his female before she lays eggs¹. The cosmography of al-Qazwîni adds² that the eagle brings this stone from India and throws it to those who approach his nest; it is also met with in the nests of vultures.

Idrîsî (p. 181 l. 6) says that "the stone *Aktamak* اکتمکت is found in the mountains of India "between Qîmâs قیماس (to be corrected Qimâr قمار i.e. Khmêr or Kambodja) and Sarandîb سرندیب (Ceylon)."

Birûnî however who is best informed about India writes as follows: *Akathmakath* is an Indian remedy acting in a similar manner as peony. In the *Collection* of Ibn Mâsawâh it is said that it can be substituted for peoney, and for this reason some people have thought it to be the fruit of the peony-plant; but I think it is far from being so, as peony is a Greek remedy and this is Indian...

Dâwûd (I, p. 78) repeats Gh.'s and IB's sayings and adds: "It is brought from Yemen³. There is a white kind with something like sand in its interior of which it is

said that it comes from our town Antioch¹; but I never saw it (there). The stone which I saw was of the first kind (i.e. like an acorn) and it was procured for me by a person from Upper Egypt from the region near the emerald-mines²; but it was as big as a pomegranate, and when we opened it, we found in it something like red sand."

The Indian stone (*hagar hindi* حجر هندی) or Tanta stone (*hagar tantâwî* حجر طنطای) of the modern Cairo druggists may have been originally the same as the eagle-stone. What is sold under these names to day is a kind of resinous mass (according to *Ducros* p. 100).

Sickenb. (Arzn. p. 17) thought that the eagle-stone might be a kind of pebble of the Libyan Desert which often carries another one loose inside it. But this latter is heavy and hard, and the ancient authors affirm that the eagle-stone is light and that several kinds are easily crushed.

Wittstein, in his edition of Pliny (*Abû Mansûr* p. 314) thinks that the eagle-stone is a kind of brown iron ore; but it is useless to propound hypotheses on a superstitious remedy of Antiquity. The traces of this superstition are to be found in many lands.

109. ISFÎDHÂĞ سفیداج White Lead.

1. Dâwûd's birthplace

2. This is Wâdi al-Hamâmât وادی الحمامات on the route between Qenâ and Qusair in the Eastern Desert of Upper Egypt.

1. J. Ruska, Das Steinbuch des Aristoteles. Heidelberg 1912 p. 165.

2. J. Ruska, Das Steinbuch aus der Kosmographie des Zakariyâ ibn Muhammad ibn Mahmûd al-Qazwîni. Kirchhain 1896, p 17.

3. 'Umar b. Yûsuf, Sultan of the Yemen, does not mention it in his *Mu'tamad*.

(Lecl. no. 73).

Diosc. V (88 a): A cover of lead is placed on the mouth of a jar containing concentrated vinegar. This is covered with a cane-mat hermetically closing it to stop any steam coming out¹. When the lead cover melts and falls into the vinegar the clear part of the latter is separated and the thick residue is collected in a vessel, dried in the sun and ground or pounded; the first method is better.

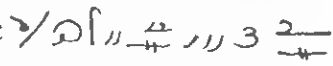
Galen IX (XII, 243 foll.): White lead is formed when black lead (*usrub* اسرب) is melted in vinegar, in the same manner as verdigris (*zingâr* زنجار) is formed when copper is melted in vinegar. White lead is cooling and verdigris is heating and burning.

COMMENTARY.

White lead is basic lead-carbonate; the principle of manufacturing white lead is still nearly the same as in Antiquity. Medically it was used by the Greeks and Arabs for dry collyria, plasters and the like.

Synonyms: Gr.: *ψιμύθιον* (*psimythion*, *Diosc.*), *ψιμύθιον* (*psimmythion*, *Galen*); Lat.: *cerussa*; Ar.: *isfidhâj* اسفيداج; the word is Persian (*sapîd* سپيد, white). Pers.: *sapîdâ* سپيدا, *sapîdâb* سپيداب, *sapîdâj* سپيداج, *isfidâj* اسفيداج; Turk.: same name, and

1. This part of the article is abridged by BH.

istûbej استوبج (*Avni* p. 113); Eng.: white lead, pearl white, Roman white etc.; Fr.: *céruse*, *blanc de plomb*; Germ.: *Bleiweiss*. Greek word transcribed in Demotic  London and Leyden Magical Papyrus (G. Sobhy).

110. ISRING اسرينج *Red Lead* (Minium).

(Lecl. no. 74).

It is called *siring* سرينج, i.e. *as-saliqûn* السليفون and *az-zarqûn* الزرقون¹ and in Greek *σάνδυχος* (*sândychos*)².

Ar-Râzî: It is black lead burnt in a strong fire until it turns red; then salt is thrown over it. It may also be prepared by burning white lead.

Diosc. V (88 b): White lead is sometimes pounded and placed in a deep sauce-pan on the fire; it is then stirred up until it takes the colour of red arsenic (*zarnikh* زرنیخ); this is called *σάνδυξ* (*sândyx*).

Galen IX (XII, 235): It is more refined than white lead and yet does not heat in the same way.

COMMENTARY.

Minium is a combination of oxide and peroxide of lead

1. According to IB (I p. 32 l. 10) these are popular names given by the inhabitants of the Maghrib.
2. Our MSS. give the genitive while IB has the correct spelling *sandûqs* سندوقس i.e.

(Pb_3O_4); it is still obtained in an easy way by heating white lead; and the produce is called "rouge de Paris".

Idrisî distinguishes in white lead two kinds: *ânukî* آنوكى and *rasâsî* رصاصى¹; when the *ânukî* is burned with sulphur it turns red and becomes minium. This is an error, as the result is cinnabar.

Synonyms : Gr. *σάνδυξ* (*sândyx*, *Diosc.*), *σάνδιξ* (*sândix*, *Galen*); Lat. : minium, sandyx (*Pliny XXXV*); Ar. : *isring* اشرنج; Pers. same name, and *saranj* سرنج or *surinj* سرنج (*Schlimmer*), *shangarf* شنكراف or شنعراف (*Vullers II*, 471); Turk. : *qurshûn sôlken* قورشون سولسكن (*Avni* 386); Eng. : minium, red lead; Fr. : minium, oxyde rouge de plomb; Germ. : Mennige, Bleirot, Pariser Rot.

111. ÂZFÂR AT-TÎB أظفار الطيب, Sweet Hoof.

(Lecl. no. 104).

Al-Khalil² : It is a black odoriferous substance resembling nails mixed with incense (for fumigations).

Diosc. : II (8) : *ὄνυχες* (*ónyches*)³ is the cover of a kind of shell-bearing animals; it is like the shell of the purple-fish (*furfir* فرفير). It is found in India in stagnant and foetid waters.

1. Both words designate " of lead " or " of tin ".

2. See note 1 to p. 203.

3. Here the plural of *ὄνυξ* is used.

Its smell is aromatic because this animal lives on nard (*an-nârdin* الناردین). A kind is also found in Babylonia which is black and small. Both are aromatic and their smell resembles slightly the smell of castoreum (*gund-bâdastar* جند بادستر). Both are useful as fumigations for atresia of the uterus (*ikhtinâq ar-raham* اختناق الرحم). (According to *Sharaf* p. 384 this expression also designates hysteria).

Masîh : Hot and dry in the second, rarefying thick chyme.

Ar-Râzî : It causes heaviness to the head and headache.

Ibn 'Imrân : As fumigations it is emmenagogue.

COMMENTARY.

Unguis odoratus ("odoriferous nail") is the cover of a marine snail, probably *Murex inflatus* L. Sprengel (*Berendes* p. 155) thought it to be *Strombus lentiginosus*, and the strongly odoriferous kind *Pleurotoma Babyloniae* or *Pl. Trapezii*. It was in former times a medicinal drug in Europe under the name of *Blatta byzantina*. It is still sold in the drug bazaars of the Near East and of India. The description of the drug found in the Cairo drugstores is given by *Ducros* (p. 86 foll.).

Birûnî gives a very long and important discussion on this drug. He mentions at first the Greek, Syriac and several Persian names and the sayings of *Masîh* on it (*vide*

suprâ). He then continues: "It is the shell of an aquatic animal like that which exists in the interior of a shell-fish (*shank* شاك, Persian name) known as *sapîd-muhra* سپيد مهره (Persian name for *Conchula Veneris*); it sticks by its glutinous character to any wood in the water; it is a kind of cowry-shells (*wada* ودع).

Hamza (al-Isfahânî) said that they were the scales of the skin of *mîsh-mâhi* ميشماهی¹.

Ibn Mâsawaih and al-Hushakî الحشكي²: The *mîshmâhî* is adherent to its flesh and skin, and the scales are detached from the skin. It is found in the Sea of Yemen and sometimes in the estuary of the river³ in the region of Basra; it is brought fresh to Abbadân⁴. Most of which that is exported comes from al-Bahrain⁵, and it is the best for fumigations; that which has a stinking smell gives, when grilled, a breath of the perfume of ambergris.

Al-Kindî said: The animal of the (odoriferous) nails is like a piece of gut on the two ends of which are two balls, in each of which is a nail and they are said to be its eyes.....

The shells are of different kinds, and the best are

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1. A Persian name of a (shell-?) fish; not in the dictionaries.
 2. An unknown author frequently quoted by Bîrûnî.
 3. I.e. Shatt al-Arab in the Persian Gulf.
 4. A town, formerly island, south of Basra, now an important petrol area.
 5. A land at the east coast of Arabia, on the Persian Gulf.

al-qurashiyya القرشية¹. The Indians like it and call it *tah kurshî* ته كرشي or the *qurashî-nail*. They are brought also from the region between Gudda and 'Adan², and they are small and yellowish like asafoetida or like the hollow of the shell of the pistachio-nut. One druggist pretends that the *hâshimî* الهاشمي³ kind is next to it in goodness, that they are bigger than the *qurashî* and of red colour; but others contest this. Then comes the kind called nails (hoofs) of asses on account of their size and thickness; they are as big as a *dirham*⁴ and blackish (in colour).

Al-Hushakî: The *makkî*-nails are brought from Gudda and the coast of Mecca; they are inferior to those of Bahrain and not suitable for fumigations. They are like shells and their colour is reddish. When they (the shells) are taken off the animals they are prepared with perfuming substances and then sold.

Ibn Mâsawaih: The lily-wine (*maisûsan* ميسوسن) perfumes them when they are dipped in it and then washed..... (illegible words).

Al-Hushakî said about this: They are macerated in water and salt for three days, then washed with hot water

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1. Probably from the tribe of Quraish in Arabia.
 2. Djedda and Aden, west coast of Arabia.
 3. Perhaps named after the family of the prophet, Hâshim.
 4. A silver or copper coin.

until their flavour and foul smell disappear, and are then dried. They are then thoroughly cooked with spices, put into Meccan sand and dried, then grilled, care being taken not to burn them.

A vegetable substance happened to come from India like the barks of pistachio-nuts, resembling human nails, white on one side and yellowish on the other, having a certain odour; it is called *nâkhuna* ناخته¹, and the Indians use it in *Dhob* دهب², which is one of their fumigations".

Thus, according to al-Birûnî and his sources, the *Ungues odorati* came, in former times, mostly from the coasts of Arabia. The Yemenite sultan Yûsuf b. 'Umar does not mention them, however, in his *Mu'tamad*.

Synonyms: Gr.: ὄνυχες (*ónyches*); Lat.: ungues odorati Ar.: *azfâr at-tîb* أظفار الطيب; Pers.: same name and *nâkhun-i-pariyân* ناخن پاریان (fairy's nail); *nâkhun-i-khôsh* ناخن خوش, *nâkhun-i-bâyâ* بويا ناخن ("odoriferous nail") Birûnî, *nâkhun-i-dîv* ناخن دیو ("devil's nail"), Vullers II, 1271; Turk.: *ezfâr-i-tîb* أظفار طيب; Eng.: sweet hoof; Fr.: blattes de Byzance; Germ.: Räucherklau.

112. INFABA إنفاها, Rennet.

1. From Persian *nâkhun* — nail.

2. It may be spelt *dhab* or *dhob*; *dhûpana* is a Sanscrit word for "fumigation".

(Lecl. no 172).

They are the rennets of suckling animals.

Galen X (XII, 274): All rennets are hot, refining, solvent and dry. A rabbit's rennet triturated with vinegar is useful against epilepsy. Some people say that rabbits' rennets are useful for retained phlegm in the chest. I, however, did not try it nor did I know of its action, and I doubted it very much, because that disease needs astringents whereas this drink is strongly irritant and resolving.

Diosc. II (75): Rabbits' rennets: three oboli of it when drunk with wine, are good for insects' bites and chronic diarrhoea; it promotes pregnancy in the form of a pessary. It is useful when drunk with vinegar against epilepsy. (fol. 15 v)

Galen (XII, 274): The rennets of a mare confine loose bowels.

At-Tabarî: If a pregnant woman drinks of a male rabbit's rennet together with his testicles mixed with wine, she gives birth to a male. And when she drinks of a female rennet she gives birth to a female.

Al-Isrâ'ilî: The rennets of donkeys and of he-goats, when drunk with wine, are useful for dropsy.¹

1. This word is mutilated in the editions of 113 جبن instead of حبن. Lecl. (I, 158) gives the correct translation.

Diosc. II (75): The rennets of the he-goat, sheep, young and old gazelle, the onager¹, the antelope and the calf are similar in their faculty and are good when drunk, for the poison called ἀκόνιτον (*akóniton*, Aconitum Napellus L.). The rennets of the sea-animal called φώκη (*phôke*, seal) have the same faculty as castoreum: useful when drunk against epilepsy and atresia of the uterus (hysteria). In conclusion all rennets coagulate fluids and dissolve solids.

COMMENTARY.

Some of the kinds of animals enumerated by *Diosc.* were replaced by Hunain in his translation by others which were better known to the Arabs. Rennet was later on prepared as a dry powder (*pulvis seriparus*).

Synonyms: Gr.: πίτυα (*pitya*); Lat: coagulum; Ar.: *infaha* انفة, *anâfih* أنافح (*Dâwûd*, who gives names in many Oriental languages; so does *Bîrûni*); Turk.: same word and *penîr-mâyasi* پنیر مایه سی (*Avni*), *yaghurt-mâyasi* یغورت مایه سی (*Sa-my*); Pers.: *mâya-i-panir* مایه پنیر (*Schlimmer*); *panîrâ* پنیره (*Vul-lers I, 378*), *panîr-maya* مایه پنیر (*Steingass*); Eng.: rennet; Fr.: présure, cailllette; Germ.: Lab.

113. AF'Â افی, Viper.

(Lecl. no. 120).

1. In Diosc.'s text πλατυκέρως (*platykérôs*), i. e. dappled buck.

Galen XI (XII, 311): The flesh of vipers dries, heats and resolves when corrected with oil, salt, dill and leek. Experience has shown that when a serpent falls alive in a liquid and dies in it, and a leper drinks of that liquid, his skin becomes thickened and drops off; the rest of his flesh becomes as soft as that of a snail. (We omit here many stories that happened in our times)¹. It (the viper's flesh) resolves a certain matter from the whole body which becomes exuded by the skin. That explains why a great number of lice are generated in the body because of it.

Diosc. II (16): Ἐχιδνα (*échidna*) i.e. the viper. Its flesh, when cooked and eaten strengthens the sight and stops scrofulous glands from growing. It is said that its eating produces lice, which is a wrong statement. It is believed that people who feed on it have their lives prolonged.

Unknown Author: Abuse of feeding on vipers' flesh ulcerates the body and corrupts the temperament. If a viper is pounded and smeared over the place of its bite, it cures it.

COMMENTARY.


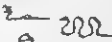
It is particularly in Galen that we find the relation of a great number of miraculous cures by vipers' flesh. Andromachus, physician in ordinary of the Roman Emperor Nero, was the first

1. This is probably a note by BH who abridged the long record of Galen.

to add this remedy to his famous theriacum, which was compounded of more than sixty drugs. The "great theriacum" with vipers' flesh was said to be an efficient remedy against leprosy; it was always the subject of various superstitions.

Idrîsî (p. 36) gives various tales on vipers' flesh. *Bîrûnî*'s paragraph on vipers is short, and *Ibn Gazla* only repeats Galen's words. But *Dâwûd* gives a circumstantial record of this drug, and mentions which kinds of vipers are the best for use as remedies, together with legends about the action of vipers' poison, mostly extracted from Greek sources. He mentions the Egyptian horned sand-viper, (cerastes).

Damîrî (translated by Jayakar I, pp. 56 - 64) abounds in legends about vipers and repeats some of the sayings of medical men (Bakhtîshû' and others).

Synonyms: Gr.: *ἐχιδνα* (*echidna*); Lat.: *vipera*; Ar.: *af'â* افعى (plur. *afâ'î* افعى); Turk.: *engerek* (vilan); انكر ك ييلان; Pers.: *af'î* افعى or *mâr-i-af'î* مار افعى; Eng.: viper; Fr.: vipère; Germ. Viper; Anc. Egypt:  Coptic. .

114. IBN 'IRS ابن عرس, Weasel.

(Lecl. no. 12).

Diosc. II (25): It is *mygalê* (*mygalê*)¹. When its skin is removed and the contents of its abdomen are emptied

1. Thus spelt in our MSS. T and G and in *Bîrûnî* and *Idrîsî* although this word means a field mouse. The quoted paragraph of *Diosc.* refers to *γαλῆ* (*gâlê*), i.e. the weasel,

and the rest salted and dried in the shade and taken in the dose of one *mithqâl* it makes the strongest antidote for (stings of poisonous) insects. Its ashes, when mixed with vinegar, are good as an ointment against gout.

Galen X (XII, 362): I have never tried it¹.

COMMENTARY.

It is the small weasel *Putorius vulgaris* Briss. (Mustelidae) which is very common in the Oriental houses². Many legends are known about this little carnivorous animal, e.g. that it brings forth its young in places where gold is hidden³, or that it brings gold as a ransom for its captive young⁴. *Idrîsî* (p. 35) gives synonyms in many languages, *Dâwûd* a detailed reference to its medicinal faculties.

Synonyms: Gr.: *Γαλῆ* (*gale*, *Diosc. Galen*), (*iktis*, Aristotle); Lat.: *mustela* (*Pliny XXIX*); Ar.: *ibn 'irs* ابن عرس, 'irsa عرسه (*Dâwûd*), *abu'l-hukm* أبو الحكم, *abu'l-waththâb* أبو الوثاب, (*Damîrî*), *abû 'arûs* أبو عروس (Syria, *Berggr.* 103); Pers.: *khazz* خز (*Schlimmer* p. 388), *râsû* راسو (*Naficy*);

1. This is an extract from Galen's longer paragraph.

2. In Egypt and Palestine a variety *Putorius africanus* (*Mustela palmata*) abounds.

3. Dr. Meyerhof's Egyptian servant once dug up a part of the floor in order to discover such a treasure!

4. 'Abd al-Latif, according to *Damîrî* (Jayacar II p. 421

Turk.: *gelinjik* كالبجك; Eng.: weasel; Fr.: helette, fouine;
Germ.: Wiesel, Hausmarder.


115. ARNAB أرنب, *Rabbit* (Hare).

(Lecl. no. 54)¹

Some physicians say that when it is pounded and placed in a jug it is useful against ulcerations of the intestines (dysentery). Rabbits are sometimes burned whole and used against stones of the kidneys; if the abdomen with the viscera is roasted in a sauce-pan and mixed with attar of roses it causes hair to grow on the head.

COMMENTARY.

All kinds of medicinal properties are still ascribed to the organs of hares and rabbits. *Dâwûd's* paragraph on this fact is very long.

Synonyms: Gr.: *λαγῶδες χερσαῖος* (*lagôds chersaios*), *λαγιδεύς* (*lagidéus*); Lat.: *lepus*, *cuniculus*; Ar.: *arnab* أرنب, *arnab barrî* أرنب برى, *khazaz*, *khizaz* خزز (male hare, *Dâwûd*); Pers.: *khargûsh* خرگوش, *khargûsh franji* خرگوش فرنجی; Turk.: *tavshan* طاوشان, *ada tavshan* اده طاوشان; Eng.: hare, rabbit; Fr.: lièvre, lapin; Germ.: Hase, Kaninchen. Egypt.:  *wen*; Coptic (Scala magna), *ⲁⲣⲛⲁ ⲉⲱⲟⲩⲧⲉ*, *ⲉⲁⲣⲁⲭⲱⲩ*, *ⲣⲁⲧⲫⲁⲧ*.

1. IB's corresponding article refers to *al-arnab al-barrî* i.e. the hare (not rabbit) according to *Diosc.* (II, 19). BH abridged Gh's sayings, the full text of which is preserved by IB (I, p. 21, I. 20 foll.).

116. ARNAB AL-BAHR أرنب البحر, *Marine Hare*.
(Lecl. no. 55).

Ibn Sînâ: A small marine animal with a solid¹ reddish shell. Between its parts there is something like the leaves of the salt-wort (*ushnân* اشتنان).

Another Author: A small marine animal with a stone in its head.

Diosc. II (18): *λαγῶδες θαλάσσιος* (*lagôds thalassios*); it resembles the young of the animal called *τενθίς* (*tenthís*, cuttlefish). If smeared on a part of the body, alone or with nettle (*qaris* قريس) it removes hair.

Galen XI (XII, 344): The oil in which it is cooked is used to remove hair.

Another Author: The ashes of its head are useful against alopecia. It sharpens the sight. This animal is poisonous, and when any quantity of it is taken it kills the person by ulcerating his lung.

COMMENTARY.

The "marine hare" is, according to Sprengel (*Berendes*

1. The texts of Gh read *جالي* which gives no sense. This word is missing in the Bûlâq text of Ibn Sînâ and in all the texts of IB. The old Rome edition of the *Qânûn* (1593), however, reads (p. 135) *جادی* which was possibly transcribed *جادی* or so by *Plempius* (II, p. 63).

p. 159) a harmless Mediterranean marine snail, *Aplysia depilans* L. which was the subject of various superstitions. Italian fishermen of to-day still believe that its mucus causes the hair to fall out.

The Oriental drug-books repeat the Greek legends of the poisonous qualities of this sea-shell, but none of their authors seems to have ever seen or tried this drug.

Birûnî says that the marine hare is a "stony piece".

Ibn Gazla says, that when it is taken it causes dyspnoea, injection of the eyes, dry cough, hæmoptysis, violet urine, and other symptoms; also taste of rotten fish in erucations.

Synonyms: Gr.: *λαγὼδς θαλάσσιος* (*lagôds thalássios*); Lat.: *lepus marinus*; Ar.: *arnab al-bahr* أرنب البحر (Gh.), *arnab bahrî* أرنب بحرى (*Ibn Sînâ, Birûnî, IB* etc.); Pers.: *arnab-i-bahrî* أرنب بحرى; Turk.: same name; Eng.: marine hare; Fr.: *lièvre de mer* (Cuvier, Lecl. I, p. 53); Germ.: *gemeiner Seehase*.

ERRATA

PAGE	LINE	FOR	is	READ	it
"	5	11	is	"	it
"	7	23	"	"	Scholars
"	8	6	"	"	Simple
"	15	18	"	"	it was
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"	22	14	"	"	Christian
"	25	21	"	"	others
"	32	1	"	"	know
"	32	10	"	"	extant
"	35	4	"	"	Medicine
"	35	22	"	"	מפדיאנא
"	41	9	"	"	part
"	57	7	"	"	question
"	61	12	"	"	emmenagogue
"	67	20	"	"	disagreeable and
"	68	2	"	"	not tobe
"	70	14	"	"	Tamazisk
"	70	17	"	"	OCI
"	72	3	"	"	tothe
"	73	18	"	"	Dioscurides
"	90	1	"	"	rough
"	109	4	"	"	fall
"	111	18	"	"	اندراسلون
"	170	14	"	"	العيشة
"	183	9	"	"	it
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"	189	14	"	"	almost
"	190	2	"	"	always
"	215	14	"	"	Sulphate
"	219	16	"	"	explanation
"	221	8	"	"	طنطاوى
"	229	3	"	"	rennets
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N.B. — The division of words into syllables at the end of lines has been wrongly done in many cases. We leave it to the indulgence of the reader to correct them while reading.